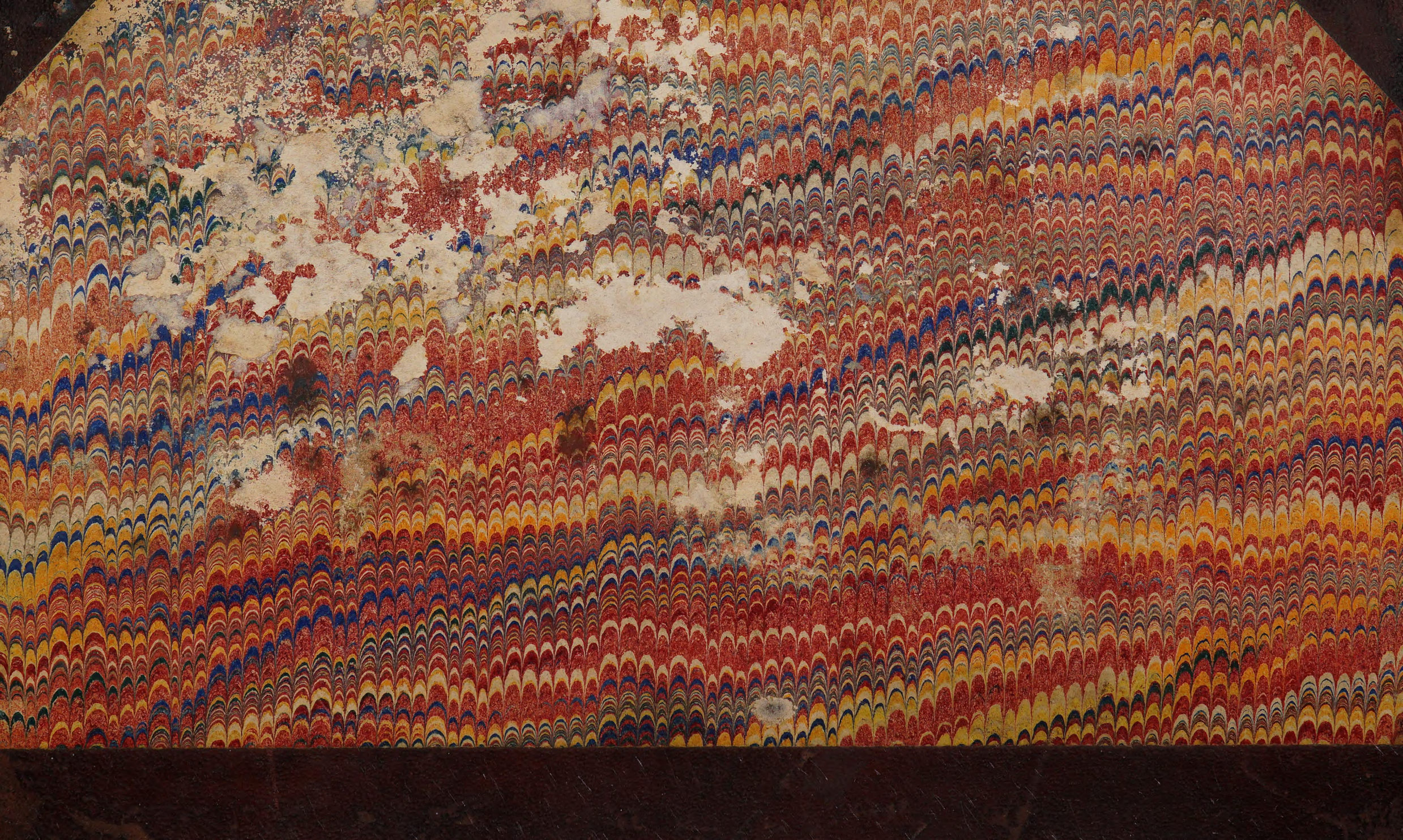

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AND

# Annals of Comparative Pathology.

EDITED BY

GEORGE FLEMING, F.R.C.V.S.,

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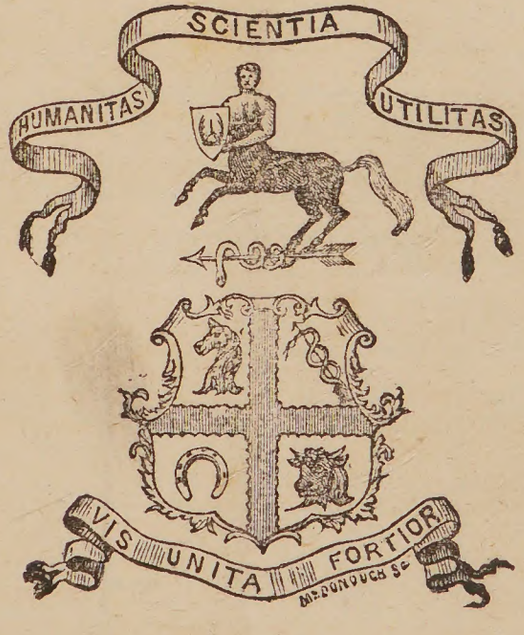


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THE VETERINARY JOURNAL

AND

Annals of Comparative Pathology.

JANUARY, 1880.

# THE PATHOLOGICAL HISTOLOGY OF EPIZOÖTIC PLEURO-PNEUMONIA.

BY CHARLES S. ROY, M.D., LONDON, ASSISTANT AT THE PHYSIOLOGICAL INSTITUTE OF THE UNIVERSITY OF STRASSBURG.

THIS work was undertaken at the suggestion of Professor Burdon Sanderson, to whom I am indebted for much kind advice and aid in encountering the various obstacles which presented themselves in carrying it out. I have also to acknowledge with gratitude the material assistance I have received from the British Medical Association; and without the faithful reproductions of my drawings, which I owe to the skill of Mr. Noble Smith, my paper would have lost a large proportion of whatever value it may possess.

The material for investigation was taken from twenty-one cases in all, from every one of which specimens were obtained for histological purposes. In every instance the *sectio cadaveris* was made in my presence immediately after the animal had been killed. There is no room for doubt that the animals were really affected with the disease in question; for, apart from the fact that six or seven of the cases occurred at a farm near London, where Pleuro-pneumonia has been enzoötic for several years, I had the advantage of being accompanied at nearly every *post-mortem* examination by a highly competent and experienced veterinary surgeon.

Before attempting to give a description of the morbid changes which are found in the lungs of Pleuro-pneumonic cattle, it is necessary to refer, though here we shall be as brief as possible, to one or two peculiarities in the anatomy of the bovine lung which distinguish it from that of man and of most other mammals.

*Normal bovine lung.*—One of these peculiarities (which, it may be added, have a direct bearing on the morbid anatomy of Pleuro-pneumonia) is the extreme degree to which the division into separate lobuli is carried. In form, these lobuli are irregularly polygonal, and they vary in size within tolerably wide limits; in most cases their greatest diameter, when the lung is distended, measures between one and three-and-a-half centimeters. They are joined together by loose connective tissue—so loose, indeed, that but little dexterity is required to separate them completely one from another without injury to the alveolar substance.

On injecting salt solution, or warm solution of gelatine, by one of the bronchial branches into the alveolar tissue, the fluid which transudes through the walls of the alveoli distends considerably this interlobular connective tissue, even when comparatively little force is used in injecting; so that the lobuli are found separated from one another by crack-like spaces filled with fluid, which measure, usually, three or four millimeters across.

The bronchiole, with its accompanying vessels, which passes to each lobulus, enters it on that aspect which is turned towards the root of the lung, afterwards dividing into a varying number of branches according to the size of the lobule. The branchlets of the pulmonary artery form, at the point where they enter into each individual lobule, typical examples of the so-called *end arteries, i.e.*, neither they nor their branches anastomose with the vessels of the neighbouring lobuli; and the importance of this fact, which corresponds with what is known as to the arrangement of the pulmonary vessels in other mammalia, will be seen when the characters of the Pleuro-pneumonic lung come to be described. Another point which requires notice here, is the arrangement in the bovine lung of the lymphatic vessels. These present certain characteristic peculiarities which appear to be due to the

extreme degree to which lobulation is carried, the lobuli forming more or less independent units—each representing, in fact, a miniature lung, which is anatomically complete in itself.

Under the pleura the lymphatic vessels form, on the surface of each superficially-seated lobule, a somewhat irregular plexus, to which the radiating arrangement of the component vessels gives a roughly stellate appearance. Corresponding with the extent of the pleural surface of the lobules, these plexuses measure from one to three centimeters in diameter. They are rounded or polygonal in shape. The vessels, or rather, sinuses, of which they are in great part composed, measure usually from a fourth to two millimeters in breadth by from two to eight in length. Joining these larger vessels together are relatively narrow canals, which are mostly provided with valves. Each stellate plexus is in communication with its neighbours through the medium of short, constricted channels, the course of the lymph through which is governed by the valves which are contained in their interior. These subpleural lymphatics can be readily injected by the "puncture method," and in making such an injection it may be seen that the coloured fluid spreads with great ease through the wide vessels composing any given plexus, but that it passes with much less readiness from one plexus to the others lying in its immediate vicinity. On this account it is difficult, from any single puncture, to fill with injection fluid more than four or five of these stellate networks. On the other hand, the Berlin blue, or other fluid used, passes readily from the subpleural lymphatics to the lymph-vessels which accompany the bronchioles and small blood-vessels; and, *vice versa*, it is easy to fill completely very considerable tracts of the subpleural lymphatic plexuses by injecting from the peribronchial or perivascular lymphatics—this, it need scarcely be added, is readily managed by inserting and tying the point of the syringe into the loose tissue immediately beside the wall of the small bronchus or pulmonary artery going to the part which it is desired to inject.

The vessels which connect the subpleural plexuses with the perivascular and peribronchial lymphatics, pass through the interlobular connective tissue, and can be beautifully demonstrated

by injecting the lymphatics and the alveolar cavities simultaneously—the former with Berlin blue, and the latter with warm gelatine solution. On account of the presence of these vessels, the interlobular connective tissue which is situated near the pleural surface of the lung is much more rich in lymphatics than that lying between the more deeply-seated lobuli.

In the case of the lungs of most mammals, as is well known,* there are present lymphatic vessels which run under the pleura towards the root of the organ, and whose function it is to convey the lymph from the pleural membrane to the retrobronchial glands. It is important for our subject to notice that, in the bovine lung, vessels of this kind are not found; in spite of oft-repeated and careful injections of the pulmonary lymphatics, I have never been able to find any evidence in the lung of the cow and calf of the existence of such vessels. Moreover, the course which the injection-fluid takes when the point of the syringe is introduced under the pleura indicates clearly enough what is the route normally taken by the lymph which enters the subpleural lymph-plexuses. As has been said, the Berlin blue passes with the greatest readiness into the perivascular and peribronchial lymphatics. The pleural lymphatic vessels, therefore, behave towards each superficially-seated lobule as if it were an independent lung in miniature, and pass over its surface to join the lymphatics leaving its root. Each lobule thus, not only in regard to its blood-vessels, but also in so far as concerns its lymphatics, is anatomically independent; and it is scarcely possible, in connection with the subject of Pleuro-pneumonia, to overestimate the importance of this deviation from the normal rule; for, as will be shewn further on, the morbid process in cases of the disease in question invariably spreads along the lymphatic vessels. If we ignore the above-mentioned peculiarities in the normal anatomy, many characteristics of the Pleuro-pneumonic lung necessarily remain unintelligible.

In so far as concerns their finer histological characters, the lymphatics of the cow's lung, both those situated under the pleura as well as those in the walls of the alveoli and infundibuli, do not differ in any important point from the pulmonary lymphatics of other mammalia. We have nothing to add to or take away

* Klein, *Lymphatics of the Lungs.*

from the description of these which has been given by Dr. Klein in his invaluable monograph on the subject, and turn now to consider the characters of the lung when it is the seat of the Pleuro-pneumonic process.

*Macroscopical characters of the Pleuro-pneumonic lung.*—A short reference to the macroscopic characters of the diseased tissue must necessarily precede the description of the minute anatomy, which forms the subject proper of this report. For this purpose we give the notes of two cases, in which the lesions present may serve as typical examples of those which are most frequently encountered. These notes were written in part at the time of the *post-mortem* examination, and were completed after a more thorough study of the fresh specimens had been made at the laboratory of the Brown Institution. Seeing that the general characters of the disease are the same in all affected animals, it has been thought better, instead of encumbering this paper with the notes of the other cases, simply to record the particulars wherein they differed from those two which are given in full.

CASE I.—(Extent of tissue involved comparatively limited.) Dairy cow, aged five years. Time of illness supposed by owner to be about a week. (Such opinions were naturally in all cases of little value.)

*Left lung.*—Pleural cavity contains about a pint of serous exudation-fluid. A thin layer of false membrane glues together those portions of the visceral and parietal pleuræ which are seated over the affected part of the lung. The false membrane peels off readily. The subpleural connective tissue is infiltrated with a dull, yellowish-white exudation which hides the margins of the superficial lobuli. The diseased part, which is about the size of a man's head, is somewhat rounded in shape, and occupies the lower part of the posterior lobe. A section through the infiltrated tissue shews the characteristic marbling due to the difference in colour between the reddish-yellow lobuli and the paler exudation occupying the interlobular connective tissue. The colour of the lobuli varies at different parts of the diseased mass: at some parts it is a pale reddish-yellow, at others the tinge of red is more pronounced; and one portion, about the size

of the fist, has a dark-red, almost black colour. These varying tinges of red pass gradually into one another in many points; elsewhere, again, the line of division between portions of tissue having different shades of colour is sharply defined. This sharpness of boundary is best seen in the case of the dark-red part, which is roughly wedge-shaped, with its base towards the pleural surface. The interlobular exudation also differs in its characters at different parts. At the margin of the affected mass, it is translucent and slightly yellowish in colour, with whiter points scattered here and there; at this part, it is semi-fluid, and escapes in good part on incision.

The interlobular exudation in the more deeply-seated portions is dull-white or greyish, with a slight tinge of yellow; and here, also, although it is completely solidified, examination with a lens shews that its surface is not absolutely uniform in colour. The subpleural exudation is seen on section to have the same characters as that occupying the interlobular tissue. The same granular appearance is found, on cutting or tearing the consolidated alveolar substance, as characterises the human lung affected with Croupous Pneumonia in the stage of red hepatisation.

The boundary line of the consolidated mass is somewhat irregular, the limit of the affected tissue being at some parts sharply defined, while at others the healthy passes gradually into the diseased substance. The irregularity of the boundary is due, in part, to the fact that the fibrinous exudation extends for a greater or less distance along the vessels and bronchi which pass into the diseased region. This perivascular exudation has the same characters as that which has already been described as occurring between the lobuli.

The artery passing to the dark-red hæmorrhagic portion contains a long, firmly adherent clot, which is greyish-red in colour, and is at some parts of a lighter tinge than at others. With this exception, the larger blood-vessels found in the affected mass are healthy in appearance, although their adventitia is infiltrated with fibrinous exudation.

The small bronchi passing through the affected part contain a quantity of viscid muco-pus. Their mucous membrane is at

some points irregularly swollen and paler in colour than usual. The lumen of some of the smaller air-tubes is seen to be almost occluded by this swelling, while in others the mucous membrane appears unaffected.

Right lung is healthy. The trachea and bronchi, with their branches, excepting those within the limits of the diseased tissue, are healthy in appearance.

Two of the bronchial lymphatic glands are much enlarged, and one or two of their afferent lymph-vessels contain a firm fibrinous plug extending for a few centimeters along their interior. The walls of the plugged lymphatics are thickened. The enlarged glands are firmer than usual, and present an uniform smooth surface on section. From the cut surface there exudes a viscid, slightly yellowish, translucent fluid.

Other thoracic viscera normal.

Abdominal viscera normal.

CASE II.—(The extent of affected tissue was here so great that it is given as a contrast to the above comparatively mild case.) The pleuræ are adherent on both sides over the larger part of their surface.

*Left lung*.—Nearly the whole of the posterior two-thirds of the organ is consolidated. The marbling is present throughout the diseased mass, as in the former case, whose general character it follows closely. About a half of the posterior lobe is dark-red in colour, due evidently to the occurrence of hæmorrhagic transudation. This part has a sharply-defined boundary separating it from the paler parts. Scattered through the diseased substance other hæmorrhagic masses are seen, all presenting the same sharpness of margin and varying much in size, some being so small that only a single lobulus is involved. A thick semi-transparent fluid escapes on section of the diseased tissue, the quantity, however, varying at different parts of the mass. The outer parts, those next the healthy lung tissue, are the most succulent, nearly the whole of the exudation flowing gradually away when a portion of the tissue is left for some time suspended by a thread over a beaker. At other parts, the amount of the non-coagulated exudation is relatively small, and the tissue is firmer to the touch and usually paler in colour. These drier parts are,

as has been noted, situated in the depth of the diseased mass, but in their immediate vicinity at some places are portions which are much more succulent.

The colour of the alveolar tissue varies as in the previous case, and the exudation between the lobuli and under the pleura has the same character in both instances.

The mucous membrane of the bronchi which was found within the limits of the diseased mass, is here and there irregularly swollen, and on the surface of the thickened membrane a few shallow ulcerations can be seen. The adventitia of the vessels and bronchi which pass through the diseased tissue is infiltrated with solidified exudation, resembling in its characters that situated between the lobuli. Those arteries and some of the veins of the hæmorrhagic parts which have been more minutely examined, contain firmly adherent clots.

*Right lung.*—The whole posterior lobe is occupied by the disease, the characters of which are the same as in the lung of the opposite side. In this lung, also, a large hæmorrhagic mass is found.

The connective tissue round the upper part of the two bronchi, at the point where they join the trachea, is infiltrated with exudation. Their mucous membrane, as well as that of the posterior part of the trachea, is irregularly swollen.

Four or five of the retrobronchial glands are larger and firmer than usual, and present an uniform, gelatinous surface on section.

Heart and large vessels normal.

Left kidney shows a few greyish-white mottlings scattered through its cortical substance, and its pelvis contains a calculus about the size of a bean. Right kidney is normal in appearance. Liver healthy.

These two cases will suffice to show what are the more striking macroscopical characters of the disease. Of my other cases, one presented, in addition to the lung affection, an infiltration of the loose connective tissue of the posterior mediastinum, extending from the diaphragm to the retrobronchial glands, and causing enormous swelling. The exudation here was translucent, semi-fluid, and slightly yellowish in colour.

In another case, two or three whitish nodules were found in the substance of the liver. Each of these was about the size of a bean, and they were firmer in consistence than the surrounding liver-substance. One of them, seated superficially under the capsule, produced a slight elevation on the surface of the organ.

In a third case, one of the kidneys presents in its cortical substance the same irregular whitish mottling which was found in Case II; here, moreover, there was no calculus present in the pelvis of the gland. The corresponding kidney was normal in appearance.

In so far as regards the general characters of the diseased tissue, one case resembles another pretty closely, and on looking over the notes of the cases which formed the basis of this report, I find that they differed from one another mainly as to the particular part of the lung, or lungs, in which the disease was situated, and as to the amount of lung-substance which was involved in the morbid process. As to the localisation of the lesion, there seems to be no part of the lung which is free from attack; nor, on the other hand, does the disease show any marked predilection for any particular region of the organ.

The amount of lung-substance involved varied greatly in different cases, and the two examples which are recorded above sufficiently illustrate this. Such differences, however, help us but little to a better understanding of the disease, seeing that it was impossible in any given case to tell whether the disease had *ab initio* involved all the tissue found affected at the time when the animal was killed, or whether the morbid process had for some time previously been gradually extending. For, unfortunately, no reliable data were obtainable enabling us to determine the time during which the disease had existed in any of the cases which were examined. And this is only what might be expected, considering the obscurity of the early symptoms and the insidiousness with which the disease seems so often to commence. Nor are there any characters in the lesions present in any individual case from which definite conclusions as to its age may be deduced.

Most writers on the subject of Pleuro-pneumonia seem to agree in holding it to be a subacute or chronic process, and the histology

of the disease fully bears out this veiw. There are also grounds for believing that, while in the great majority of cases the disease, having once affected the lung, spreads more or less gradually, invading the pulmonary tissue by degrees, in some rare cases, on the other hand, having once attacked a larger or smaller tract of lung substance, it shows but little tendency to spread. The morbid process appears to spread much more rapidly in some cases than in others, and on that account the extent of tissue affected cannot in any case be received as a means of discovering the time during which the disease has existed.

It is naturally very important, in dealing with the minute anatomy, to try to discover, in any given diseased lung, which parts have been first affected, and which more recently, in order to learn through what stages of development the affected tissue passes. Without entering on debatable ground, I may, for convenience of description, speak of the diseased lung-substance in three stages.

I. A stage in which the tissue is infiltrated with fluid, or semi-fluid, gelatinous exudation.

II. Where the exudation is more or less completely solidified.

III. Where the diseased tissue is characterised by being firmer, frequently paler, and usually less succulent, but which is specially distinguished by the fact that the blood-vessels are no longer pervious.

This last has naturally nothing in common with the dark-red hæmorrhagic parts, except that in both the vessels are impervious.

The hæmorrhagic infarctions, with their resulting anatomical changes, we prefer to treat as accidental complications occurring in the course of the disease. That they do not play any essential part in its pathology is sufficiently proved by the fact that they are completely absent in many cases, and by an examination of the cause of their occurrence in those cases in which they present themselves.

The above-named stages, it should not be forgotten, are purely abitrary divisions which are assumed only for convenience' sake. The tissue infiltrated with semi-fluid exudation, and which is

usually, though not invariably, situated at the more external part of the diseased mass, as a rule passes gradually into the tissue where the exudation has become solidified, and that again into that portion of the diseased lung-substance where the tissue is firmer and the vessels are impermeable to injection-fluid. On the other hand, as is noted in the two cases which are recorded above in full, in some places the portions of diseased tissue at different stages may be sharply defined from one another.

The third stage is not present in all cases, but its pathological importance has induced us to give it a place along with the other two, for it seems that through this stage the diseased tissue must pass before recovery can take place; that is, if recovery ever does result in cases of Pleuro-pneumonia—a matter which appears not altogether beyond doubt. The macroscopical characters of this third stage are not such as to distinguish it at the first glance from the second stage, though the difference between the two is usually quite evident on more careful examination. My attention was first attracted to this condition of the affected tissue, by finding that the blood-vessels were at some parts impermeable to injection-fluids. We shall find that its histological structure is sufficiently characteristic.

*Liquid exudation.*—In turning to the finer anatomy of the disease, the fluid exudation which infiltrates the outer parts of the affected lung-substance naturally comes first to be examined. It is rich in albumen, and its yellowish translucent appearance is due to its containing a variable number of red blood-corpuscles and cell-elements. These cells have, for the most part, the characters of white blood-corpuscles, *i.e.*, they are pale, slightly granular, are provided with one, two, or three nuclei, and when examined on the hot stage, show an amœboid movement. Besides these, and in variable proportion, there are other cells which are larger, being from twice to three times the size of the leucocytes, or lymphoid cells, as they are often called. These larger cells are usually distinctly granular, with one large bright nucleus, more rarely they have two, or even three, nuclei; their protoplasm is often vacuolated or else contains globules of fat. They also show a sluggish amœboid movement when examined under suitable conditions. These epithelioid cells resemble in their

essential characters those which are found in young tissue, or in developing cicatricial tissue, and which Ziegler* found to arise from the development of ordinary lucocytes—an opinion in which he is supported by Cohnheim.†

Ziegler's method of observation consisted in introducing under the skin of the dog small glass chambers of such a kind as admitted of their contents being readily examined with the microscope. These chambers he examined at various intervals of time after their introduction, and found that, while at first they contained chiefly pus-corpuscles, these later on were found to have disappeared in great part, their place being taken by the larger cells. Ziegler did not, of course, observe directly the formation of the larger epithelioid cells from the pus-corpuscles, but this method of inquiry leaves little room for doubt that the pus-cells, through assimilation of the surrounding albuminoid matter, and most probably of one another, increased in size, and assumed the characters peculiar to the larger cells. In Ziegler's observations these epithelioid elements underwent further changes, resulting in the formation of typical *giant-cells*. In the Pleuro-pneumonic exudation, on the other hand, these large cells seem mostly too degenerated, and break down, without advancing to any further stage of development; for, as has been noted, they very often contain large fat-granules, or their protoplasm is vacuolated; besides which, there is found floating in the exudation-fluid a large quantity of granular *débris* and free nuclei, which are evidently the remains of pre-existing cell-elements. It should be added, that between the pus-cells and the larger epithelioid elements all varieties of intermediary forms are found.

*Minute anatomy of the diseased lung-substance.*—Turning now to an examination of the minute anatomy of the affected lung-substance, we shall first attempt to describe its rougher histological characters as seen on examining thin sections of the hardened tissue with a low magnifying power.

On examining such sections taken from various places, passing from the healthy tissue into the substance of the diseased mass, we find, at the portions which are least affected—those usually situated next the healthy lung-substance—that the exudation is seated almost exclusively in the interlobular connective tissue, or in that lying under the pleura when the section is taken close to the free surface of the lung. The alveolar substance is still comparatively unaffected, although the lobuli may be completely embedded in the surrounding fibrinous exudation. The exudation at the very outer part of the disease has, being semi-fluid, disappeared in good part during the process of hardening, leaving only a few fibrinous bands strengthening the normally present

* "Ueber patholog. Bindegewebsneubildung," in *Verhandl. der Würzburger p. med. Ges. N.F.*, Band x, 1876.

† *Vorlesungen über allgemeine Pathologie*, 1877.

connective tissue-fibres which pass from each lobule to its neighbours.

Advancing further into the affected region, we find that these fibrinous bands become rapidly thicker and thicker, until the spaces situated between the lobuli are filled and distended by an apparently compact mass of coagulated fibrine. In this condition the interlobular spaces usually measure from two to four millimeters across. We have said that this coagulated exudation was apparently compact; but more careful examination shows that running through it there are a number of wide channels, whose walls, when seen in cross section, present an irregularly rounded outline. These canals, which are readily overlooked, on account of their lumen being almost invariably filled with fibrinous coagula, vary much in width at different parts, but as a rule they measure somewhere between an eighth and half a millimeter in diameter. They can, in fresh specimens, be injected with coloured fluid by the *puncture method* without great difficulty, and their nature thus more closely examined. In specimens so prepared it is easy to convince oneself that these canals running through the coagulated exudation are in direct communication with the perivascular and peribronchial lymphatics—that they are, in short, provisional lymphatics, destined to carry off the lymph from the diseased tissue. In their arrangement these canals vary much at different parts of the affected lung-substance, but they form usually a tolerably rich network between the lobuli. This network is closest near the pleural surface of the lung, and closest of all in the exudation lying under the pleura. That they are not the same lymphatics which are present in the normal lung, between the lobuli and under the pleura, is evident from the fact that, in the latter situation, their course is entirely different from that of the normal subpleural lymphatics, whose arrangement, as has been pointed out, is very characteristic. It has been said that they are usually filled with fibrinous coagula, and it is between these latter and the wall of the canal that the injected colouring matter finds its way.

In fig. I., which represents a vertical section taken from a superficially-seated lobule and seen with a low magnifying power,

these provisional lymphatics are well shown. On the right-hand side of the drawing, it can be seen that the coagulated exudation which occupies the subpleural connective tissue (*a*) is pierced by a number of channels (*b b*), which are partially occluded by fibrinous coagula. The dark lines running between these clots and the walls of the lymph-vessels represent the Berlin blue with which the specimen had been injected (*puncture method*) previous to its being hardened.

At the lower part of fig. 1. is represented a part of the interlobular exudation (*c*), in which one lymphatic vessel (*d*) is seen in transverse section. Towards the middle of the section, and near its upper left-hand corner, can be seen the perivascular and peribronchial exudation (*f*), in which are situated several lymphatics containing Berlin blue.

In tissues which have reached what we have called the *third stage* of the disease, the above-described lymphatics can no longer be injected, or else the injection passes only for a very short distance along their interior. Even here, however, the outline of the closed tubes can be seen *in situ*, they having evidently become impermeable at the time when, on the cessation of the capillary circulation, no more lymph remained to be carried off.

Independently of the presence of the lymph-channels, the appearance of the interlobular exudation, when seen in thin sections with a low-power objective, is by no means uniform, from the fact that the meshes of the network formed by the fibrinous threads are closer at some parts than at others. This want of uniformity in the fibrinous matter lying between the lobuli, which is rendered strikingly apparent by the variation in depth of the bluish tinge which logwood imparts, is evidently due for the most part to the gradual and irregular manner in which the coagulation of the fibrine has taken place.

Leaving for a moment the *interlobular* exudation, we turn to notice shortly what are the rougher histological characters of the *intralobular* tissue within the limits of the affected part. It has been said that, before the alveolar substance proper becomes involved, the disease products are found invading the connective tissue between the lobuli and under the pleura. Simultaneously

with its appearance in these latter situations, and also, therefore, before the alveolar substance is affected, we find the exudation occupying the tissue surrounding the intralobular blood and air-tubes. This condition is illustrated by the specimen from which fig. 1. was taken, and in which it can be seen that the air-cells are still free from evident affection.

The perivascular and peribronchial exudation resembles in its general characters that which is found between the lobuli, *i.e.*, it consists for the most part of fibrinous coagulum. It is generally found that, although the vessels and bronchial branches are completely surrounded by a thick layer of exudation, their lumen at first remains unobstructed. In those tissues, however, which have advanced well into the *second stage* of the morbid process, and *a fortiori* in the *third stage*, the intralobular bronchioles most usually contain fibrinous coagula.

Throughout both the first and second stages, the perivascular and peribronchial lymphatics remain pervious to injection-fluid. After the exudation has invaded the loose connective tissue of the affected region, and thus compressed to a greater or less degree the alveolar substance, this latter is finally found to be the seat of well-marked morbid changes.

Using a higher magnifying power, we return to the examination of the interlobular exudation. This we now see contains a varying number of cell-elements. These are for the most part young or pus-cells, such as were described as being present in the fluid exudation when examined in the fresh condition. Confining our attention for the moment to the diseased tissue in the second stage of development, we find that, at some points, the interlobular exudation is infiltrated with cells in great numbers, while at others these are only thinly scattered through the fibrinous coagulum. The key to this inequality of distribution of the pus-corpuscles is to be found in the presence of the improvised lymph-channels, which have already been described; for it is round their walls, and in the substance of the coagula which they usually contain, that the cells are most thickly crowded. At many parts, indeed, they are so closely packed, and the intercellular substance has become so much attenuated, that the term *lymph-adenoid* might justly be used to describe the

morbid tissue. At other parts, again, the tissue is not so completely flooded with cells, and the wall of the lymph-canal may be surrounded by only two or three layers of pus-corpuscles, while in the exudation between the canals only isolated cells, or groups of two or three, may be found scattered. The cells themselves, however, whether they are present in large or in small numbers, are identical in appearance; they are typical pus-cells, and differ in nothing from the cells found in tissues in the condition of simple inflammation. It is only in their distribution and, as we shall find, also in their life-history, that they are characteristic of the disease in question. Fig. II. is intended to illustrate the fact that these cells are mostly found crowded round the wall of the lymph-channels and in the meshes of the fibrinous clots which these usually contain in their interior.

At some parts we find the interlobular exudation presenting the characters of developing cicatricial tissue. This is most commonly found near the outer boundary of the affected mass, but by no means invariably so; of all places it is most commonly present near the pleural surface of the lung, and most so in the subpleural exudation. And it is on account of its cell-elements tending more readily to form cicatricial tissue, that the subpleural exudation distinguishes itself from that lying between the lobules.

The newly-formed connective tissue usually presents a laminated appearance on section, being composed of layers or bundles of fibrous tissue with intervening spaces, to the sides of which flattened cells are applied. This form of tissue, from its resemblance in structure to that of the cornea, has been named by Köster* *keratoid connective tissue.* When seated under the pleura, however, the newly-formed tissue may be supplied with blood-vessels which have reached it from the parietal pleura passing through the partially-organized pleuritic false membrane. This pleuritic false membrane must not be confounded with the subpleural exudation—that lying under the visceral pleura: the former differs in no essential particular from the fibrinous exudation found between the layers of the pleura in ordinary Pleuritis.

* Koster, *Sitzungsber. d. niederrheinische Ges. zu Bonn*, 1875.

Besides the lymphoid cells, the interlobular and subpleural exudation contains a varying number of epithelioid elements. These are more commonly found under the pleura than between the lobuli; and are, generally speaking, most abundant at those parts where the tendency to organisation is most marked.

At many parts, the cells which are contained in the exudation show signs of degeneration. This is especially the case in that condition which we have termed the *third stage.* Here the lymphoid cells are usually dull, seem often to be breaking down, and their nuclei stain badly with logwood or carmine, while the epithelioid cells contain vacuoles in their protoplasm, which has often become coarsely granular or contains large fat-globules. With these latter cells also the dull appearance of the cell-substance, and the difficulty with which the nuclei can be stained with colouring agents, lead to the belief that they have died before the animal was slaughtered. Cells showing signs of degeneration are also found during the *second* or even the *first stage,* while it is the rule in the *third stage* to find them either much degenerated or necrosed. In this latter stage, also, we often find the place of the cell-elements occupied by large numbers of unequally-sized angular granules, which are distinguished by their being tinged readily with carmine or logwood. They are usually found surrounding the wall of the lymph-channels, which in this stage are impervious, or in their interior. The presence of these granules, their unequal size and angular shape, together with their characteristic grouping in rings round the wall of the lymph-channel, form one of the most striking peculiarities seen on examining stained sections of Pleuro-pneumonic lungs. They are not confined entirely to the *third stage,* though in it they are most common, but occur here and there throughout the tissue in the *second stage* of the diseased process.

Leaving the disease products found under the pleura and between the lobuli, there present themselves for consideration those changes which occur within the lobuli, and which have only as yet been referred to in their rougher characters.

The perivascular and peribronchial exudation within the lobuli resembles, in many points, that found between the lobules. In both

the same fibrinous exudation is present, with its unequal and irregular appearance due to its irregular deposition or coagulation; in both there is the same peculiarity as to the distribution of the cell-elements, which have the same characters in both situations. In the tissue which we now consider, the cells are, however, on the whole more numerous, and in perhaps the majority of specimens examined the characters are those of *lymph-adenoid* tissue. In the exudation round the intralobular vessels and bronchi, too, the same tendency to organisation is found, the appearance of the cicatricial tissue being the same as in the interlobular exudation.

The lymphatic follicles which are found in the course of the perivascular and peribronchial lymph-vessels, and the importance of which in the pathology of Tuberculosis has been demonstrated by Burdon Sanderson and Klein, become in Pleuro-pneumonia early affected. They are found enlarged, the contained lymph-cells being increased in number, while the margin of the follicle is rendered indistinct and irregular by the presence of irregularly scattered cells. The usual appearance of the exudation round the vessels and bronchioles is represented in fig. III., which is taken from a specimen in the *second stage* of the disease.

In the *first stage* of the morbid process it is the rule to find the inner and middle coats of the intralobular blood and air-tubes unaffected. In the *second stage*, however, these structures frequently present a varying degree of cell-infiltration. In so far as concerns the bronchioles, while the muscular coat usually retains its normal appearance, the mucous membrane is often found infiltrated with fibrinous and cellular exudation to such an extent as to cause considerable increase in its thickness. The cells here found, being of the same kind as those which are present in the interlobular exudation, need not again be described.

No matter how seriously the mucosa be involved, it is most common to find the epithelial layer unbroken; although their dull appearance, and the imperfect degree to which their nuclei can be tinged with colouring agents, show that the cells have undergone some molecular change—most probably necrosis. The number of cells found in the interstices of the mucous membrane

varies greatly at different parts of the diseased tissue, and here and there both it and the muscular layer appear scarcely affected.

As regards the arterioles and venules of the lobuli, it is usual in the second stage to find both the media and intima but little changed, while at the same time the lumen is unobstructed; at some parts, however, which are comparatively rarely met with, these structures are infiltrated with a varying number of cell-elements. It is still more rare to find any evidence of proliferation of the endothelium of these smaller vessels. Such proliferation is, however, found not infrequently at those parts which are the seat of the hæmorrhagic infarctions, and in these cases it is the rule to find the lumen of the vessel occupied by a fibrinous clot. In the *third stage*, the vessels usually contain a finely molecular substance, imbedded in which a few scattered nuclei can generally be seen; the endothelial layer is, however, unchanged in appearance. In the *third stage* it should also be observed that the cell-elements of the exudation which is situated in and around the walls of the intralobular blood-vessels and air-tubes, are usually more or less degenerated, the cells being at some parts replaced by granules, which are often angular, and which are stained more deeply by logwood or carmine than the surrounding molecular or fibrinous matter. At other parts, the cells retain their form, but are distinguished by the imperfect way in which they take on the staining of colouring agents; elsewhere, again, they have the same characters as those found in the *second stage*.

## EXPLANATION OF THE FIGURES.

FIG. I.—Vertical section from pleural surface of diseased lung. Enlargement 10 diameters. The lymphatics have been injected with Berlin blue.

*a*. Subpleural connective tissue infiltrated with exudation.
*bb*. Subpleural lymphatics containing coagula. The dark parts the coloured injections.
*c*. Interlobular exudation, with
*d*. Lymphatic vessel cut across.
*e*. Alveolar tissue.
*f*. Perivascular and peribronchial exudation with injected lymphatics.

FIG. II.—Interlobular lymphatic vessel, seen cut across, with large numbers of young cells around and within its walls.

*a*. Fibrinous exudation.
*b*. Wall of lymphatic.

*c.* Mass of lymphoid cells. (Obj. iv. Hartnack. Eye-piece No. ii., tube drawn out.)

FIG. III.—Exudation round interlobular vessels and bronchus.

*a.* Alveolar tissue.
*b.* Artery.
*c.* Veins.
*d.* Bronchial branch. (Obj. No. iv. Hartnack. Ocular No. ii.)

*(To be continued.)*

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## EXTRAORDINARY CASE OF TUMOUR ATTACHED TO THE STOMACH OF A MARE.

BY A. H. SANTY, F.R.C.V.S., NORWICH.

THE subject of the above was a chestnut cart-mare, in remarkably good condition. She was very fat, and reckoned by her owner to be between twenty-five and thirty years of age. On the morning of the 4th November she had a large quantity of food given to her, and being a greedy animal, she also ate the contents of a nose-bag which was well filled, while waiting half an hour before proceeding on her journey. She was seized with colicky pains about 12 o'clock on the road home, and I was called to see her about 1.30 p.m., as soon as she had arrived. I found her in great pain, the pulse quick, weak, and intermittent; there were incessant eructations of gas, which could be seen passing up the œsophagus; there were also cold sweats. These symptoms remained unchanged until death took place at 4.15 on the following morning. I had attended the same animal on three former occasions, on two of which I noted the following symptoms: she was extremely dull and off her feed, pulse very weak and intermittent, but not much increased in frequency, respiration increased, and a peculiar sound was heard on listening to the heart's action—this I invariably noticed, and she always had an intermittent pulse, and a dull, vacant stare when well, but she was an excellent feeder. On the other occasion, I attended her for a sharp attack of Azoturia, which was very marked. She was with difficulty removed to the infirmary although it was only a quarter of a mile from where she was kept, and as soon as she got in the

Fig I.

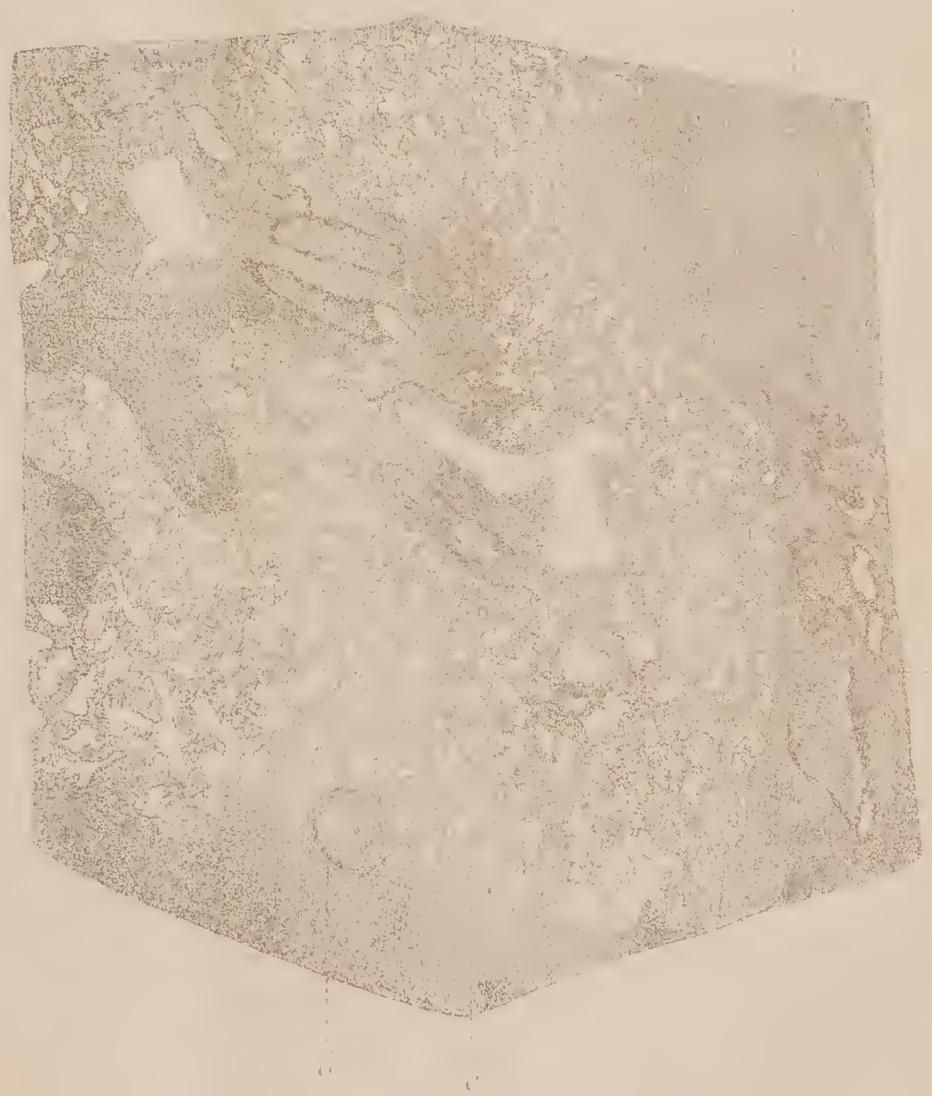

Fig II

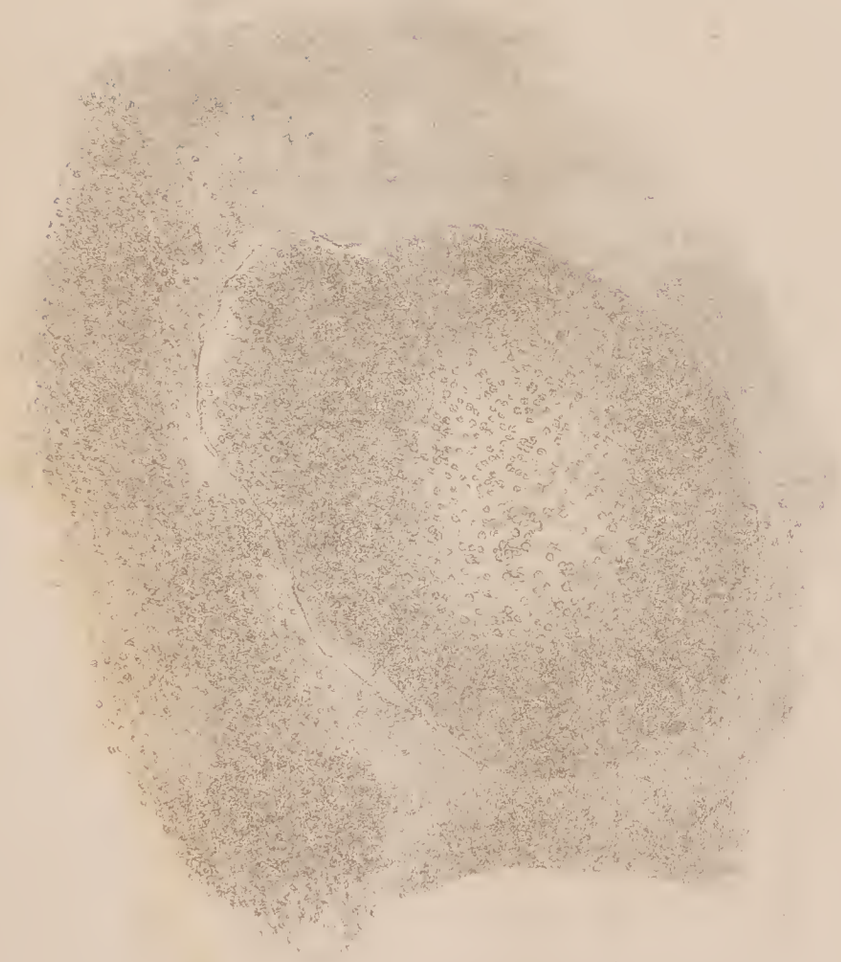

Fig III.

box, she went down, unable to stand, and remained so for about twelve hours. She perfectly recovered from this illness, however, and remained in apparently good health until this last occasion. She was a good worker and a most useful animal.

*Post-mortem Examination.*—On carefully making an incision down the *linea alba*, an immense quantity of fluid escaped, along with small portions of food, at once leading to the conclusion that there was a rupture of some part of the alimentary canal. Proceeding onwards, I came to what at first appeared an enormously distended and diseased stomach resting on the parietes of the abdomen, but which, on making a closer examination, I found to be a tumour weighing over five stones, and measuring four feet one and a half inches round its long, and three feet three inches round its short axis. It seemed wonderful to me how an animal could do its daily work, and digestion go on, with such a great weight and bulk as this, which must have interfered most seriously, one would think, with the movements of the stomach and intestines. The only attachment the tumour had was to the stomach, which organ was extensively ruptured. The duodenum was greatly dilated near to the pyloric orifice, and the heart was also much dilated, especially the auricles. The remainder of the viscera were healthy.

[The tumour referred to was sent to the Brown Institution, where it was examined by Mr. Duguid, who reports that its only attachment to the stomach was through the omentum, which it chiefly involved. The weight of the mass when detached from the stomach, etc., was more than sixty pounds. In structure it was composed almost entirely of cells, with very little connective tissue. The cells were spindle-shaped, and Mr. Duguid is of opinion that it (the tumour) was a spindle-celled sarcoma. Some portions of it, in which the circulation was stopped by plugging of the vessels, were in a gangrenous state. It would have been worth noting at the autopsy whether the mesentery and mesenteric glands were involved.]

## HÆMORRHAGE AFTER CASTRATION.

BY J. NUNN, M.R.C.V.S., ROYAL ARTILLERY, CAMP, ROZY-A-BAD, AFGHANISTAN.

IN the September number of the VETERINARY JOURNAL, which has just reached me, are some remarks by Professor Walley on hæmorrhage after castration; and also in some former numbers the practice of plugging the scrotum is condemned by various practitioners. Perhaps the following case may be of some interest. In January of this year, while encamped at Fort Jumrood, during the late Afghan campaign, an officer bought a Turcoman stallion, about six years old, from a dealer who said he had brought the horse from Bokhara; and the animal turning out troublesome—kicking in the ranks and screaming at mares—he requested me to castrate it. On my representing to him the increased danger after the operation because of the horse standing in the open in the depth of winter, with frost at night and a powerful sun all day, he said he was willing to run any risk, as it was useless to ride with troops in its present state. Accordingly I operated, removing the testicle with the clam and knife, and searing the cord with the actual cautery. The horse got up and appeared very little the worse, very slight cutaneous hæmorrhage taking place. This was between 3 and 4 o'clock in the afternoon. At 11 p.m. I was called, the horse being reported "bleeding to death." On seeing him, in about ten minutes, there was a stream of blood pouring from the right side of the scrotum, and which was stated to have been flowing for half an hour. I had the horse secured, and plugged the scrotum on that side with fine tow, pushing it well up into the canal, and throwing a little water on the scrotum and penis out of a bucket. The bleeding entirely ceased in a quarter of an hour. The horse was kept standing, and fed on mash diet for two days, when the tow was removed. He never exhibited a bad symptom, and made a rapid recovery, his owner riding him at the present time as a second charger. During the whole time the animal was in the open, the sun being very powerful during the day, with several degrees of frost at night.

## DEATH FROM STRANGULATION OF THE INTESTINES.

BY J. M'GAVIN, M.R.C.V.S., MONTGOMERY.

ON the 6th November I was called to a white carriage horse, belonging to N. W. F. Humphreys, Esq. He was nineteen years of age, and had never been ailing before. The day previous he was driven to Welshpool, to the stag hunt, a distance of seven miles, where he stood for half an hour, and was then driven home again. He had his usual food, and appeared to be all right, but next morning he was in pain. I treated him for Colic, and he became easier; but the pain returned in the afternoon and continued, and his pulse got very high. I used morphia subcutaneously. His abdomen became very much distended with gas, and was punctured, but all to no purpose; he died in twenty-eight hours.

I made a *post-mortem* examination three hours after death, and found at the posterior end of the colon the tumour which has been forwarded. It was attached to the omentum by a small tendinous process the thickness of a pencil, which process encircled the colon, and produced strangulation of that viscus, and death.

[The tumour forwarded was about three inches in width, two in length, and three-fourths of an inch thick. It was not much discoloured, and appeared to be composed of fat and connective tissue.]

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## A FEW REMARKS ON THE USE OF THE CLINICAL THERMOMETER.

BY ADRIAN JONES, M.R.C.V.S., THE QUEEN'S BAYS, DUBLIN.

THERE being an outbreak amongst the well-fed hunter class of horses, I determined to make a few observations regarding the use of the thermometer. These remarks I forward to you, hoping you will insert them for the benefit of those who do not use that valuable instrument, that they may be the means of inducing them to try it and give us any practical suggestions which may occur to them.

1. If a horse is reported "off his feed," and on examination

his pulse and respiration are normal, but the temperature is over 105°, that horse will develop a Fever of some description in from three to four days.

2. If a horse is exactly similar to the above case, excepting in the temperature, which does not exceed 103°, Catarrh, or slight Laryngitis, or other mild disease will be the result.

3. During Fever the thermometer is of great advantage ; the temperature being high or low at least twelve hours before *any other symptoms* of increase or diminution of the Fever, gives warning, hence the treatment can be modified.

4. In not one single case out of a great many have I found the thermometer give erroneous indications. At first I could not reconcile the discrepancy between it and the ordinary means of diagnosing disease. For instance, I have seen a horse eat everything given him, pulse to the slightest extent increased, respiration normal, and otherwise looking well, but the temperature 105°. But the next day he was decidedly ill, the illness increasing daily, the temperature remaining about the same.

5. If the high temperature remains the same it is unfavourable;

6. But if it is very low, and the other symptoms are severe, it is favourable.

A few words on Bilious Fever—I mean, when the animal is nearly comatose, and the mucous membrane of the mouth and eye are the colour of mahogany. It runs its course thus: From the partial loss of appetite and high temperature to the extreme symptoms, there elapse four days. If the temperature is lower on the fifth day, there will be a *gradual* decrease of all the urgent symptoms to the seventh, when there will be a rapid change for the better. But if the temperature keeps high, the urgent symptoms will continue until the fourteenth day. To check the course of the disease appears to me impossible, but to moderate its intensity is possible. The treatment I have found most efficacious has been to give such medicines as act directly on the liver, such as podophylin, taraxacum, and mercury up to the fourth day; then bleed, and give diffusible stimulants, or gentle sedatives, as indicated by the fall or rise of temperature.*

* The disease I term Bilious Fever is *not* of the ordinary type, but has developed into a specific blood disease, of which I will send more particulars hereafter.

## INVERSION OF THE BLADDER (PROLAPSUS VESICÆ).

BY "VIRTUTE ET LABORE."

On May 2nd, 1878, a messenger was sent to our establishment stating that a mare—the property of a farmer a short distance from the town—was foaling and required assistance. My colleague attended her at ten p.m., being shortly after receiving the message, and with a little difficulty he relieved the mare of a dead foal. The following morning he visited her again, and on his return asked, "Is it possible for the bladder of a mare to be inverted?" My answer in the affirmative was confirmed by stating a case which occurred in my experience when a pupil, while engaged in foaling a mare. This, however, was doubted by my principal, as no such thing had happened in his long experience as an obstetrist. On hearing this, our conversation on the subject ended, and I thought no more about it.

At half-past five the same evening another messenger was despatched to us, who said that "the mare was lying, and showed signs of pain, but they were most alarmed because they had never seen her 'make her water' since she foaled," and desired her to be seen as early as possible. My colleague having gone away for a few days, I paid a visit to this case at six o'clock. My patient was a strong, grey agricultural mare (aged). She was standing, but seemed very quiet. I observed her to be very wet from the vulva downwards, and on the insides of the thighs; the bedding I stood upon was also very wet. She was heavy and dull; had not eaten anything since morning; her pulse was rather quickened, but the beat normal. She had been seen "to pain herself," but not within the last half-hour. I examined her *per vaginam* by simply drawing the labia apart, and at once observed something abnormal—a large tumour, very red in colour in some parts, particularly those farthest removed from the external air, but those nearest were much darker, in fact approaching a blue tint. As soon as the air was admitted by this opening, the mare commenced to strain, and then the tumour was wet with little flowings all over its sides. I carefully made a digital examination of the tumour, and found it to

be the bladder, which was inverted. At each throe which the mare made during the examination, I could feel the urine flow from the mouths of the ureters in very minute jets. An attempt was made to reduce the tumour by gently pressing at its sides and neck, but this proved a failure; and her throes became stronger and more frequent. A bamboo cane, with a nicely-shaped head and pretty strong body, was used as a pessary, the head being first covered with wash-leather, so that it would in no way harm the organ. After administering a full dose of chloral hydrate subcutaneously, we commenced a second time to bring about reduction. The cane-head was placed against the fundus of the bladder, the other portion being taken hold of by an intelligent assistant, who acted according to my directions while I manipulated the sides and neck. The throes of the mare did not interrupt the procedure as much as before, they being weaker and less frequent. Up to the time that the greater half of the bladder had been returned within the sphincter there was difficulty experienced, but as soon as the balance was turned it went into its normal position quite suddenly—in fact, I was afraid the cane had been pushed through the organ; however, I soon found to my great satisfaction that I was mistaken. The cane was carefully withdrawn and my hand placed upon the face of the sphincter for a moment or two, I then gave place to my assistant who retained a hand over the sphincter for fully half an hour; at the end of this time I found it contracted sufficiently to permit of my relieving her bowels with my hand and then administering an enema. She had tepid water given to drink, and a little bran and linseed to eat; of the latter she partook very little.

At midnight I revisited her. She voided some urine, and showed a tendency to re-invert the organ; my assistant, however, being present and observing this, carefully introduced his hand and retained it there for some time. The urine voided was very dark in colour and "had a bad smell." I introduced a weak solution of permanganate of potass into the bladder, and it was retained about an hour and then voided. She continued easy for the remainder of the night.

On May 4th I visited her about midday. She had passed

urine twice, but it was very dark in colour. The odour was less offensive; the bowels had not acted, so they were relieved by the hand, and an injection *per rectum* administered. A four-drachm dose of aloes was also given her. The appetite was very bad, a small quantity of bran and linseed being all she took.

She was again visited on the 5th May, the bowels had responded very slightly; the urine passed was darker in colour than on the previous day, and the appetite improved. From this time she became convalescent, and in about ten days was discharged. During nearly every one of the ten days, drachm doses of potass bicarb. were given, in either mash or water, morning and evening. Her period of œstrum came in due course, and she was "put to the horse," which resulted in her being pregnant. Her labour, however, was again attended with inversion of the bladder, but this was immediately reduced, and no other evil results followed. The foal, however, died.

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# Editorial.

## A NEW DECADE.

With the year 1880, the veterinary profession in this country begins a new decade, which, we earnestly hope and pray, may witness far greater progress in its political and scientific career, than has been effected during that which has just lapsed. Not that the advance which has been made in the last ten years has been either slow or trifling. On the contrary, it has far exceeded that of any previous decade, and especially in what we might more particularly designate its social or political condition. Indeed, within the last half of the decade it has effected more than ever it did since the obtainment of its first charter of incorporation. It has emancipated itself from the thraldom of a school or clique, which had complete control over its welfare, and exercised that control not for the benefit of the profession, but simply for its own aims and ends; and these were never in harmony with the interests of veterinary medicine or its practitioners. Every member of the profession has now a voice in the management of its affairs. Instead of two licensing bodies, maintaining a paralysing and destructive competition, one has subsided; and now the Royal College of Veterinary Surgeons, standing alone, is unfettered by an unhealthy and obstructive antagonism, while it gains a large accession to its register: many of those who now join us being well-known and highly esteemed veterinarians, who will add greatly to our strength and reputation as a corporate medical body. The period of veterinary instruction at

the schools has been extended, and with manifest advantage; the number of subjects taught has been increased to meet the demands of the Royal College; and the examinations for its diploma have been amended and revised. In addition, a higher degree—that of Fellowship—has been instituted, and this, from its nature and the privileges attending it, must eventually exercise a most important influence on future progress. All this social reform has been accomplished during the last decade, and we are confident that the position of the practitioner has improved in proportion as these reforms have made themselves felt.

In its scientific aspect, we regret that far less improvement is chronicled in our annals of the last ten years. We are yet more anxious to "doctor" than to prevent disease; to administer medicines whose action is but imperfectly known, in order to "cure" maladies whose nature is quite unknown, than to discover their causes or pathology; antiquated and utterly unscientific notions with regard to many common disorders still hold sway; and empiricism has yet an almost impregnable stronghold in our midst. True, in the short interval named, our literature affords ample proof that there are those among us who "do not stint their necessary actions in the fear to cope malicious censures," and who have made sacrifices to redeem us from the long-standing and oft-repeated charge of being illiterate. While in the VETERINARY JOURNAL, launched in the last half of the decade, every effort is made to worthily represent the profession in the world of literature and science, and to act honestly, independently, and unyieldingly in promoting the interests and prosperity of our colleagues, without reference to school or party. If original research has scarcely any place in our records, this appears to be a failing rather than a fault. The busy practitioner has no leisure or convenience for pursuing investigations, and our schools do not seem to be adapted to anything more than teaching students the rudiments of their future calling. The sister science has entered the field which should be entirely our own, and in the domain of veterinary pathology will reap the credit which she well merits, but which we see her receive with something more than a sigh of regret. The superior education she demands from her votaries, the encouragement she holds out to them, and the scientific ardour with which she endows them, ensure their success and our mortification at being nowhere in research.

With the opening of a new decade, the profession finds itself in a very different position to that which it held in 1870. It is now a united, then it was a disunited body: it is now independent, and every member has a voice and an interest in it, whereas then it was in the hands of a few, and the many were helpless and apathetic. Our pages testify to the livelier interest in professional concerns which has been awakened by the appearance of the JOURNAL, and the enthusiasm which is being developed for the suppression of abuses and the inauguration of reforms. Long before the decade is ended, and indeed within a very few years, we expect to see greater improvements effected than have yet been attempted. We are sadly in need of better education—general and

scientific—and the profession must insist upon candidates for its diploma possessing this, as on it depends all improvement—socially, politically, and technically. Our College must have a home in every way worthy of a profession which has a great future before it; and to obtain this every nerve must be strained and every source appealed to for aid. It is a disgrace to the Government and to the country, that the Royal College of Veterinary Surgeons is left to grovel in a den scarcely respectable enough for a coterie of Italian organ-grinders, seeing the immense advantages conferred upon the public by veterinary surgeons, and the very responsible duties imposed upon them. And what we have been striving to obtain for so many years—the protection of the profession and the public from the injury inflicted by impostors who borrow our title, by means of a Penal Act of Parliament—must be sought for without delay, now that there no longer remains any excuse for postponement.

Lastly, the profession should seek some means of inducing and encouraging its members to work in the wide domain of pathology, and to promote scientific advancement. All external incentive to study and work in the interests of veterinary medicine ceases when the graduate leaves his school, carrying with him medals and rewards, which are, perhaps, less intended to prove a stimulus to exertion than to attract him within the school portal. There should be no difficulty in instituting a system of rewards or acknowledgments, which would tend to rouse the latent energies and passive abilities of those who are in every way competent to undertake useful work, but who will not do so without some such prizes in view.

Finally, there are many defects and faults which depreciate our professional worth and social *status* at present, and which should be known no more to our discredit at the end of the new decade. These hold us now in heavy bondage, and we must free ourselves from them. This can be done by firmness and mutual good feeling, and united, but far more by individual effort.

> "Every bondman in his own hand bears
> The power to cancel his captivity."

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## NOTES MADE DURING VISITS TO THE REMOUNT DEPOT, SAHARUNPORE, NORTH-WEST PROVINCES, INDIA.

BY C. STEEL, F.R.C.V.S., 16TH LANCERS, ON SPECIAL SERVICE DURING THE AFGHAN EXPEDITION.

HISTORY OF STUDS AND DEPOTS.—As the Reserved Remount Depôts of the present day were preceded by Government Breeding Studs, some points in the history of the latter will give an appropriate introduction to my subject, especially as I propose to glance at the whole system of remounting the army in India.

The first breeding stud was established about 1798, at Poosah, in Lower Bengal, by Moorcroft, the well-known veterinary surgeon, who was sent out by the East India Company for that purpose, with a view to improving the breed of horses required for the army, the horses of the country being con-

sidered weak and deficient in size, although from some districts—as from the Deccan and Katyawa—good horses were obtainable for sporting or riding purposes. An extensive tract of land, amounting to about 3,000 acres, was secured, a number of mares and a few stallions were imported from England, and to these were added some mares from the Deccan and other parts of India, together with some mares, said to the Arab, which were presented. Thoroughbred and three-quarter-bred mares were at first put to thoroughbred horses, in order to *start* a good stock ; Moorcroft being thoroughly aware that whatever modifications might be subsequently desirable, without this basis of good blood the improvement could not be obtained. One drawback to an immediate improvement was very soon discovered, viz., that of the degeneration of foreign breeds as the result of climate. It was therefore found that country-bred mares must be utilized; and the wisdom of this cross, which was made at Moorcroft's suggestion, was not long in being manifested, for troops were in due time supplied with a much more suitable animal, and consequently the stud system was then declared a success. Encouraged by this result, the East India Company extended the system to the North-west Provinces and Hissar. A place to the west of Delhi was selected for a site : this place was situated in a purely sandy district, dry, and at that time unprovided with irrigation. Here a superior class of horse was also bred and supplied to all India, one of the produce called " Pretender " being so eminent as to beat all English horses on the Indian turf and realize from three to four thousand pounds—a great contrast to the relative powers of Indian and English horses in the present day, the latter having now to concede as much as two stone or more to the former. But *then* first-rate English horses were attainable at more reasonable prices than now ; it would clearly be rather too great a venture to send a " Blair Athol," " Gladiateur," etc., to India for army stud purposes. Owing to these efforts, there was a general improvement in the quality and size of the horses, and Government selected those considered the best, keeping them with a view to still further improvement ; the remainder of the produce being sold, and in a degree disseminating desirable qualities throughout the country.

About the time of the establishment of the Hissar stud, a breeding establishment was started at Padnell, in Yorkshire, from which the Indian stud was supplied mainly with stallions.

The following enumeration of some of the stock used at this period, and up to 1826, will give an idea of the material employed in the Indian studs :—

" Adonis," by " Teddy the Grinder," out of " Precipitatis " dam.
" Bone Ash," by " Trumpeter," out of " Jilt," by " Buzzard."
" Capsicum," by " Pot-8-o's," out of " Sting " by " Herod."
" Benedict," by " Remembrancer," out of " Beatrice," by " Sir Peter."
" Œlasco," by " Clavèleno," out of a " Pioneer " mare.
" Tristram Shandy," by " Woful," out of a " Sir Peter " mare.

The Hissar stud lasted until 1839, when it was broken up in consequence of the stock being considered to have too much blood. Moorcroft's guiding hand was surely wanted here, but he had long since perished in Cashmere, and it is to be feared that less educated supervision had succeeded ; for if it were true that too little bone was apparent in the produce, why sacrifice this acknowledged keystone of breeding so successfully established? Crosses securing the desired substance were surely attainable. About this time Padnell was also given up, and Willesden Paddocks established. Poosah breeding establishment succeeded, but it was subsequently transferred to the depôts of Buxar and Karuntadhee, places on the banks of the Ganges below Benares. At one time these had as many as 6,000 mares served by Government stallions, and the depôts continued, despite of the inquiry of three commissions, until

1876, when all breeding studs were abolished. Studs at Saharunpore and Hapur were started in 1844, in consequence of the climate of the North-west Provinces being considered more favourable, and were conducted partly under the Assamee system, by which mares were left in the hands of zemindars, or owners of land. The "Home Stud," so called after the defunct Willesden, was established at Kurnaul, in the Punjab, in 1864, and there the Assamee system was abolished, Government mares being kept at the stud. During its existence of about thirteen years, two commissions were assembled to report upon its progress. Difficult and varied must have been their investigations, for all kinds of vast and expensive experiments were tried in the way of crosses—thoroughbred horses served thoroughbred mares, ditto were put to half-bred country mares, Arab stallions were crossed with English, Waler and country mares, even Arabs were tried with Arab mares, and thoroughbred horses with English cart mares. The produce indicated the cross of the English thoroughbred or three-quarter-bred stallion with stud-bred mares (of English and Arab blood, and foaled in the country) as being productive of the most useful horses. Arabs were noticed to degenerate in size; "Waler" mares were remarkable for being, as a rule, barren for the first four years of their residence in the country—not more than four per cent. proving prolific, a circumstance that might be taken as rather a nice gauge as to the time required for their thorough acclimatization. Ultimately, however, their produce with English horses showed quality and points; the turf annals will also prove them to have possessed speed and endurance. Thoroughbred horses with cart mares produced nondescripts; the pure thoroughbreds were fancy articles for the turf rather than useful as horses for the army; the cross with half-bred country mares varied much in its results, but the average was not satisfactory.

The "Home Stud" started with about twenty mares, and at last reached five hundred.

One smaller depôt has not been mentioned, viz., that of Ghazeepore; and amongst private studs of any notoriety are the Vincent of Barh, in Bengal, consisting of about twenty-five to thirty mares; the Probyn at Probynabad, near Mooltan. General Parrott also started a stud in place of the "Home" one, and which is now flourishing, and numbers about one hundred head of stock. With regard to the number of mares in existence in the North-west Districts during the time that the Saharunpore and Hapur studs were working on the Assamee system, there were never under three or four thousand, and the number of stallions imported from England up to the time of the abolition of breeding studs in 1876 amounted to hundreds, of which only a few now remain.

MANAGEMENT OF STUDS.—Moorcroft might be considered the sole director of the stud system in his time; but subsequently a military staff was established, consisting of a Superintendent (Colonel), two Depôt Superintendents (Lieutenant-Colonels or Majors), Depôt Officers (Under-superintendents with subordinate officers), and a Veterinary Surgeon to each establishment. The following is a list of the Stud Department in 1870:—

Superintendent of studs.—Major Couper, Staff Corps, Saharunpore.

Deputy-superintendents of studs.—Lieutenant-Colonel Sir C. W. D'Oyley, Staff Corps, Hapur; Major W. C. McDougal, Staff Corps, Central Provinces.

First-class assistants.—Colonel A. A. Macdonnell, Bengal Infantry, Saharunpore; Colonel A. C. Plowden, Staff Corps, Buxar.

Second-class assistants.—Lieutenant-Colonel Parrott, Staff Corps, Kurnaul; Lieutenant-Colonel E. S. Jackson, Bengal Infantry, Hapur.

Sub-assistants.—Lieutenant-Colonel W. B. Irwin, Staff Corps, Poosah; Lieutenant-Colonel Trench, Staff Corps, Kurnaul; Major Smith, Staff Corps, Ghazeepore.

Doing-duty officers.—Sir J. Farquhar, late 2nd European Light Cavalry, Poosah ; Captain Rochfort, late 4th European Light Cavalry, Karuntadhee ; Lieutenant L. J. Jamieson, 7th Hussars, Ghazeepore (probation) ; Captain Capel, late 5th European Light Cavalry, Karuntadhee (probation).

Veterinary Surgeons.—Garrad, Principal Veterinary Surgeon, Karuntadhee ; Woods, Saharunpore ; Kettlewell, Kurnaul ; Skoulding, Poosah ; Bath, Hapur ; Oliphant, Hapur (officiating).

There were conductors, who had been sergeants in regiments, to overlook the grooming and feeding, a head salootree, and four or five assistant salootrees to each establishment ; nalbunds (farriers), six to each depôt ; syces, etc. The superintendent's duty was general direction. The deputy-superintendent's duty was to look to the breeding under the Assamee and Zemindar systems, the Assamee being a contract between Government and a breeder, by which the former was bound to take, and the latter to sell, the produce of mares left with them and covered by Government stallions, the price being from 70 to 120 rupees when from six to twelve months old. Under the Zemindar plan, the sale to Government was optional on both sides, the only stipulation being "first refusal" of produce. First-class assistants attended to the management of horses at the depôts or studs ; second-class acted under these ; sub-assistants helped them ; the "doing-duty officers" (not a very definite title) acted under all the former, and had certain stables told off to them, as in troops of cavalry. The veterinary surgeon's duty was simply confined to attending cases in hospital. Here was a large and important establishment ; and that the charge was considered a responsible one, will be assumed from the rank of the officers engaged ; while the high pay of officers of such standing proves also that Government was not deterred by the expense of remuneration from doing its best to make the department efficient. Doubtless, the superintendent must have had his hands full with such an army to command ; the deputy-superintendents must have been weary of their travels over extensive districts to see after the welfare of the matrons and the treatment of the rising generation ; first, second, and third class assistants, it will be observed, had separate stations, so it must not be presumed that they were superfluous ; and the "doing-duty officer" was clearly required. Thus an analysis shows that the staff was not too strong. Whether all officers were adapted for their posts might admit, perhaps, of a question. One would be rather suspicious of the intimate acquaintance with equine matters of those from infantry regiments—not that it is impossible to select horsemen from infantry, but there does not appear to have been any qualifying test. One of the superintendent's duties on visiting the districts, was to inspect the mares which were submitted to him for approval, when, if passed, they were branded on the shoulder. As has been above stated, Government was obliged to take the produce of these under the Assamee system, or on the Zemindar plan an extra ten rupees was always given for the foals of branded mares. On inquiry into the management of studs and depôts, I much regretted to find that the duty of the veterinary surgeon was so scrupulously restricted to the treatment of his patients in hospital. It is well known in the Army, and appreciated in all large horse establishments, that veterinary supervision keeps the hospital comparatively empty, and that there are innumerable opportunities for making suggestions, hygienic and otherwise, that certainly add to well-being and efficiency. It ought surely to be remembered that the veterinary officer *has* been subjected to his qualifying *test.*

FINANCE.— At all the Bengal studs a very nominal rent was paid for the land. At Hapur it is hired ; at Saharunpore it is the property of Government ; at the "Home Stud" it was also advantageously hired, with right of cutting timber. So far economy appears to have been secured. The system

of accounts, however, seems puzzling to the uninitiated. For years the accounts have been kept at Calcutta for *all* studs and depôts included, and none for individual establishments, for which merely a cash-book was kept by their respective commandants. There was one exception, however, viz., that at the India home for stallions. No attempt appears to have been made officially to estimate the cost of each horse.

When the various sources of expense subsequent to purchase are taken into consideration, no wonder that it has been found difficult to arrive at a true conclusion as to the expense of remounts by the time they join for service. In some instances a youngster is bought at six months, kept till he arrives at three or four years of age, does not then turn out satisfactory, and is rejected ; there are travelling expenses ; outlay of men attending purchase of stock ; expenses of farm ; allowances had to be made to Assamee for breeding, keep of stallions, for cultivation of grain crop, etc., and some of these, I understand, remain to this day unadjusted. The startling number of rejections during the stud system point to an enormous loss, amounting, as they did, to at least fifty per cent. of the produce purchased and bred. The present system—that of purchasing horses from four to seven years of age—ought to be an improvement, as the calculation of expenses is evidently more simple, and the risk of unfitness by misadventure much less. But there are still two great drawbacks, viz., general unfitness and unsoundness.

The latter could certainly be prevented by the more perfect recognition of veterinary aid ; the former would indicate that any scepticism as to the skill of purchasers is in some instances confirmed. And that, as a rule, such misfits can be avoided, I affirm from personal inspection of the animals bought by one particular agent, which exhibited that consistency of judgment essential in the selection of horses.

Taking the establishment of studs in India during a period of seventy years, as a commercial enterprise, it must be, and is, admitted to have resulted in absolute loss ; but the question arises, Has not the country been enriched by the general improvement in the breed of horses ? The answer is, Yes ; but, unfortunately, the structure raised during this long time is tottering, if not destroyed, by the absorption of parent stock since the apparently ill-advised total abolition of studs. I understand that stallions and mares have become almost totally extinct, in consequence of neglect on the part of the natives into whose hands they have fallen.

Another system has now, however, been started which must secure the best wishes of all connected with horse interests in India. It is that of stallions provided by Government to serve mares at a very small price—no restriction whatever, not even that of "first refusal," as in the Zemindar system, being placed upon the owners of the mares, Government competing on fair terms in the market, where it is hoped there will be a general improvement. Mr. Hallen, Staff Veterinary Surgeon, superintends this system for all India ; Mr. Batt, V.S., acts under him for the North-western Provinces and Rajpootana, his charge comprising a district larger than France ; Mr. Meyrick, V.S., for the Punjab, who represents a tract of country as large as Germany. These officers, for the insufficient remuneration of 200 rupees per mensem, in addition to their pay as Army Veterinary Surgeons, are supposed to keep an account of all the brood mares in their districts, the stock produced, and what becomes of it. To carry this supervision out thoroughly with so small a staff in such extensive districts, is obviously impossible. However, it may be a move in the right direction, but this has yet to be proved.

The price given for remounts ought to be a remunerative one to the breeder, viz., 550 rupees for four-year-olds and upwards. When we consider the expenses connected with this effort of Government to improve the

breed of horses in the country, it is obvious that a very large return ought to result in the way of increased efficiency of our cavalry and artillery.

One officer of thirty years' *Indian* experience is entrusted to purchase stallions in *England*, in place of Mr. Phillips, who formerly supplied them. There is no fixed price, and on looking through the sales of yearlings, it may be observed that some are purchased by this officer to be kept until of sufficient age for covering. The stallions are sent out by troop-ships, and consequently the expense of transit is curtailed. The number imported into India annually is from twenty to thirty. These stallions, when not on their rounds, are kept at Hapur ; and when in breeding districts, they cost about eight rupees per horse per month. There are hundreds of register keepers to pay, farriers, salootrees, etc., and at least £2,000 per annum is given in prizes for mares and geldings. The object of offering a premium for the latter is to encourage castration, as there is a very obstinate prejudice amongst the natives against the emasculation of their horses.

It is to be hoped, as before said, that this free-trade system of horse-breeding may meet with success ; if so, it may at some future time prove an example for imitation at home, where it is not impossible that some encouragement from Government may be required to keep up the supply of good horses in our markets, which, it is to be feared, is gradually failing us. The supervision in India is in excellent hands with Mr. Hallen, and that he is not idle or wanting in enthusiasm is well known. It is the working expenses and want of support from native breeders that are the chief obstacles apparent ; but if the sympathy of the latter can be secured, we may perhaps allow a large margin of expenditure to be placed against the national benefit, and be content for a time, although no direct economy is immediately obvious in the military supplies. That some mode of diminishing the cost of trooper production was necessary, will be proved by estimating the expense of matured horses during the stud arrangement and by the present depôt system. The amount under the stud system has been variously estimated at from 850 to 2,800 rupees, but the best authority appears to place it at about 1,750 rupees, the sum being made up of the price of stallions, amount of purchase money for produce, feeding, pay of establishment, rent, and repair of buildings. Is it less than this in the present day? Every "Waler" costs 100 rupees for transit from Calcutta ; add to this the purchase money, 550 rupees, the cost of Calcutta Depôt where they are collected, that of the reserved depôts of Hapur and Saharunpore, deaths, accidents, rejections for unsoundness, keep of horses at depôts (sometimes for years) at a rate of 25 rupees per horse per month, and the ultimate expenses of transit of selected horses to regiments. *(To be continued.)*

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## HEMIPLEGIA IN THE HORSE.

General Hemiplegia is somewhat rare in the horse, and an interesting case is very seldom recorded. In the Belgian Sanitary Report for 1876, quite recently published, M. Putzeys describes, under that designation, a case of Paralysis in a horse which is most unusual, so far as our experience is concerned, and which was possibly due to cerebral congestion or hæmorrhage. The animal was only four years old, and was employed in heavy draught. One evening, after returning from work, he appeared to be dull and sluggish; he ate as if he did not care for his food, and masticated slower than usual. Next morning he was in the recumbent position, and could not arise. Putzeys was called, and found the following symptoms : Lower lip, and the ear and upper eyelid of the left side destitute of sensation and incapable of movement. With the assistance of a number of men, and after several attempts,

the horse was raised to his feet, when it was found that the left fore and hind limbs had no power, but swung about or were dragged when the animal advanced ; at each step, even when assisted, it threatened to fall. Left to itself and strongly excited, it hesitated to move ; but at length when he did so, it was with great difficulty and obliquely. The pulse and respiration were greatly accelerated, and the conjunctivæ injected. The horse was bled repeatedly, cantharides liniment was rubbed into the region of the spine and the paralysed limbs ; nux vomica was administered in progressively increased doses, and setons inserted into the neck. In fifteen days the animal was able to resume its work.

In the same report, another veterinary surgeon also briefly describes two cases of Hemiplegia occurring in Norman horses, four years old, brought from France by railway. One died, the other recovered.

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## CONTAGIOUS FOOT-ROT IN SHEEP.

AT a recent meeting of the Tunbridge Wells Farmers' Club the subject of Foot-rot in sheep was discussed, when Mr. Henry Noakes, M.R.C.V.S., and the intelligent and practical farmers present, who are, of course, much interested in everything relating to sheep-farming, constituting, as sheep do, a very considerable item in Kentish agriculture, came to the unanimous conclusion that this disease was undoubtedly contagious, and that it should be scheduled as such in the Contagious Diseases (Animals) Act. It is unnecessary to go over the evidence adduced on this occasion in support of the conclusion arrived at. Suffice it to say that it was absolutely convincing, and being the result of the observations of not only scientific, but enlightened practical men, nobody with any reasonable amount of sense would be found likely to deny its value. It is a fact, that all those authorities who have made sheep a special study have arrived at the same conclusion, this having often been forced upon them by the painful and oft-recurring experience of flockmasters. For nearly a century the malady has been witnessed on the Continent, where it has been studied—experimentally and clinically—by masters of the Veterinary Art. In this country also, for nearly as long, the best authorities on sheep have described a contagious form of Foot-rot. It is true that one or two persons have denied the existence of such a malady, and assert that it is only Foot-and-mouth Disease in these animals. But they forget that this Contagious Foot-rot was seen in England many years before the latter malady reached us, and that it is prevalent in countries into which the Foot-and-mouth Disease has not yet been imported. Randall, in his excellent work on "American Sheep," describes it, and gives examples of its undoubted contagiousness. Professor Law, of the Cornell University, in the VETERINARY JOURNAL for September, 1876 (p. 161), in an excellent article on this subject, furnishes American evidence which should convince all, except those curious individuals of limited experience who are beyond conviction on pretty well everything. It is not improbable that the American sheep which were lately condemned at Liverpool as affected with Foot-and-mouth Disease, were really suffering from Contagious Foot-rot, as no cattle or pigs showing symptoms of the former malady have been received from the States ; and these animals are more susceptible than sheep, and readily receive the Foot-and-mouth Disease from them, either mediately or immediately. That the Contagious Foot-rot should be included in the small list of maladies recognised in the Contagious Diseases Act, has for many years been our opinion ; and with this object we devoted a section to its consideration in "Veterinary Sanitary Science and Police" (vol. ii., p. 351). The Tunbridge Wells Club were of the same opinion, and applied to

the Veterinary Department of the Privy Council, but they were informed that there were insurmountable obstacles—in other words, that the Department could not be bothered with them or any more contagious diseases. Agriculturists, in the matter of contagious diseases among animals, must still continue under the influence of a *laisser aller* policy and eccentric notions of infectious maladies.

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## INOCULATION FOR CONTAGIOUS PLEURO-PNEUMONIA IN HOLLAND.

In the Editorial of our last issue, we announced that Contagious Pleuro-pneumonia had been nearly, if not altogether, extinguished in Holland a few months ago, and that this happy result was ascribed to inoculation of suspected, no less than to the destruction of diseased cattle. The inoculation was compulsory only on infected farms or in infected sheds, the Minister of the Interior designating those districts or *cercles* in South Holland within which the operation was to be practised. These *cercles* comprised seventeen communes, and four veterinary surgeons were told off to assist the district veterinarian of La Haye in carrying out the measure. We now learn that between September 22nd and December 31st, 1879, no fewer than 34,784 cattle were inoculated, and that the mortality resulting therefrom was only 112, or 0·32 per cent. As the inoculations appear to have been most effectively performed, this loss is remarkably small.

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## CLAUDE BOURGELAT.

On the 30th of last October, a magnificent marble statue of Claude Bourgelat was uncovered at the Alfort Veterinary School, Paris, in the presence of a large assemblage of the Continental veterinary profession, and the principal civic and political representatives of the French capital, as well as those of general science, medicine, commerce, and agriculture. M. Bouley, of the Institute, and Inspector-General of the French Veterinary Schools, presided in the unavoidable absence of the Minister of Agriculture. Nearly all the Continental veterinary schools either sent representatives or addresses on the auspicious event, and the memory of the illustrious founder of veterinary science was honoured, not only in these, but in the eloquent speeches delivered by Bouley, Barron, and Thierry. In the evening a banquet was held at the Grand Hôtel, Paris. British veterinary medicine was conspicuous by its total absence, and in the list of subscribers to the statue—a list which included the schools and representatives of the profession in every country, as every country has benefited by Bourgelat's genius—there is only the name of one English veterinary surgeon. Yet a Frenchman and pupil of Bourgelat's—Charles Vial de Saint-Bel—started the Camden Town School, and did what he could to introduce veterinary science into this country. Truly our gratitude is not overwhelming, and our insularity, beneficial so far as national defence goes, does not appear conducive to the growth or manifestation of generous impulses or the development of science in our profession on this side of the channel. Even the Germans, so lately at war with their neighbours on the other bank of the Rhine, did not forget their good manners on this occasion, and honourably acknowledged their debt of gratitude to the great Frenchman whose efforts and example have benefited the whole world, while they have shed lustre on his beloved France.

# Proceedings of Veterinary Medical Societies, etc.

## ROYAL COLLEGE OF VETERINARY SURGEONS.

### SPECIAL MEETING OF THE COUNCIL, HELD NOVEMBER 21ST, 1879.

PRESENT—Professors Pritchard and Axe; Messrs. Anderton, Batt, Cartwright, Collins, Dray, Fleming, Freeman; General Sir F. Fitzwygram; Messrs. Greaves, Harpley, and the Secretary.

In the absence of Professor Williams, the President, through domestic affliction, Mr. Dray (senior Vice-President) took the chair.

The SECRETARY read the notice convening the meeting.

The minutes of last meeting were read and confirmed.

The SECRETARY stated that letters had been received from the President, Professors McCall, Walley, and Messrs. George Morgan and P. Taylor, of Manchester, regretting their inability to attend the meeting.

The SECRETARY stated that "Strangeway's Veterinary Anatomy," edited by Professor Vaughan, F.L.S., of the New Veterinary College, Edinburgh, had been presented to the library of the College by the author.

On the motion of Mr. CARTWRIGHT, seconded by Mr. BATT, a vote of thanks was accorded for the presentation.

The SECRETARY read a series of letters between the President, Mr. Loch, and Mr. Thomas Moore, in reference to a requisition sent by Mr. Moore, signed by twenty members of the profession, asking the Council to call a meeting of the members of the College, for the purpose of considering the advisability of requesting the Governors of the Royal Veterinary College to revise their system of subscriptions.

The following is a copy of the requisition :—

"TO THE PRESIDENT OF THE ROYAL COLLEGE OF VETERINARY SURGEONS.

"10, Red Lion Square, W.C.

"SIR,—We, the undersigned Fellows and Members of the Royal College of Veterinary Surgeons, hereby request you to call a general meeting of members of the College, as provided by the charter and bye-laws, to take into consideration the advisability of requesting the Governors of the Royal Veterinary College to revise their system of subscription, and to make the practice of the institution less competitive to private practitioners, which, in the opinion of your requisitionists, is a source of injury to the profession. Dated November first, Eighteen hundred and seventy-nine."

Some conversation having taken place as to the informality of the notice, and as to whether the Council could, in conformity with the bye-laws and the charter, accede to the terms of the requisition,

General Sir F. FITZWYGRAM said it seemed to him desirable to waive any informality in the notice, and to discuss the main question, which, he thought, was whether the Council, at a general meeting had power to discuss any matter unconnected with what might be called the affairs of the College. The only question before the Council was whether it was legal to do so, or whether they had the power to do so. It seemed to him, as Mr. Loch had stated, that the Council had no power to do anything of the sort, and he thought it desirable that the meeting should be adjourned for the purpose of taking the advice of an eminent counsel, as to whether the Council had any power in the matter at all. Of course, all things that concerned the four walls of the College, such as examinations, etc., the charter said the Council had the regulation of; but he thought it refused to them any control over the operation of fees, etc., in schools; and he very much doubted whether

the meeting could be called for the purpose indicated. He, therefore, moved that the Council should obtain the advice of some eminent counsel as to whether they could act in the matter or not. His own opinion was that they had no power to act at all.

Mr. BATT seconded the motion.

Mr. FLEMING pointed out that, according to the bye-law, when a petition had been received by the Council, signed by a certain number of members of the profession, to call a general meeting, the meeting must be called.

Sir F. FITZWYGRAM said that there were certain things *ultra vires*, and the meeting might be called for a purpose totally unconnected with the matters pertaining to the Council.

Mr. FLEMING said that was no doubt the case; but he did not think that twenty members of the profession would appeal to the Council to hold a meeting if it were not for the purpose of considering a subject connected with the profession. The present meeting was not the occasion, he presumed, to discuss the object of the general meeting, but only to grant or refuse the prayer of the petitioners.

Prof. AXE expressed his opinion that anything which did not pertain to the importance of the veterinary art or the science of veterinary medicine, did not come within the cognisance of the Society, and the question to be discussed at the meeting seemed to be a question entirely beside that. He therefore suggested that the question should not be taken into consideration.

Mr. COLLINS suggested as a compromise that the meeting should be allowed to assemble, because at present the Council did not know what the proposals were, and they ought to hear what was said. The opinion of counsel could then be taken afterwards.

Prof. AXE remarked that the precise object of the proposed meeting was specifically set forth in the circular convening the present meeting of Council.

The CHAIRMAN hoped that General Fitzwygram's motion would be carried.

Mr. GREAVES thought the Council had no power in the matter, and that it rested entirely with the President, according to the rules, to call the meeting in accordance with the requisition. He would support the course suggested by Sir Frederick Fitzwygram, to obtain counsel's opinion on the matter. At the same time, he thought the grievance—as the petitioners had called it—ought to be ventilated more than it had been, as it might then be looked at in quite a different light from what it was at present, and some reasonable concession might be made which would satisfy everybody, and be an advantage to the profession.

Mr. FLEMING again urged that the Council had no option but to call the meeting, because, in his opinion, the petition was perfectly formal and proper.

Mr. ANDERTON supported Mr. Fleming's view, that the requisition should be entertained, and said he was willing to second an amendment to that effect.

After some further observations from Mr. Fleming, Professor Axe, and Mr. Greaves,

The CHAIRMAN put Sir Frederick's motion to the meeting, which was carried unanimously.*

The SECRETARY was then instructed to write to Mr. Loch, to nominate some eminent Queen's counsel to give his opinion on the subject, and that the same, when obtained, should be laid before the Council.

* This is an error.—ED. *V. J.*

*House Committee.*

The report of the above Committee stated that, at a meeting held on October 27th, it was resolved to appoint Mr. George Greenwood, of Southampton Row, to survey and report upon the value of the property at 16, Fitzroy Square, and that an advertisement be inserted in the *Times*, *Builder*, and *Standard* in reference to the purchase of a suitable property.

The report of the surveyor, which was read to the Council, stated that he surveyed the property, and was of opinion that it was worth, in its present repair, £2,750, and that the house would require, for the occupation of a family, re-decorating; also that the stables and coach-houses were small and required repairing.

The SECRETARY stated that, having placed himself in communication with the President, he received a letter from Messrs. Whyte, Collisson, and Prichard, dated 21st October, stating that there were applications from another gentleman, who desired to have the property, and requesting a definite answer as to the decision of the Council within a week of the date of he letter.

A reply was sent, to the effect that the Council did not wish to stand in the way of any available offer being made to them.

The SECRETARY read the replies to the advertisements that had been inserted in the newspapers.

Mr. COLLINS said that the replies to the advertisements had been very few. He had gone over them all, and none of them appeared to be at all satisfactory. At the commencement of the year a deputation waited upon the Duke of Richmond on the question of getting some pecuniary grant from Government, and he promised to take it into consideration. Last week Mr. Fleming and himself had called at the Privy Council Office, and saw the Clerk of the Council, who advised them to write a letter, which they did, stating the claims of the profession on the country. A reply was sent, stating that His Grace did not seem to think there would be any use in applying to Government for pecuniary assistance at the present juncture. It only remained—unless the Council wanted to go on with the purchase of the house in Fitzroy Square, if it had not already been disposed of—for the House Committee to look around and see if there were any other suitable buildings. There was also a desirable building in Bedford Square, but it was found that to purchase it at present would be out of the question. He thought the Council should stick to the money they had until more was added to it, and by-and-bye they might obtain the building they required.

In reply to Sir F. Fitzwygram,

The SECRETARY stated that the price of the house at 16, Fitzroy Square was 4,000 guineas, and that possession could be obtained at any time.

Mr. FLEMING thought that the house in Fitzroy Square would not be an eligible one. There was not sufficient accommodation internally, and the locality was a tumble-down one, with a bad character. The house in Bedford Square was the best he had seen in London. It had a capital frontage, and was in every respect the best that could be found for the purposes of the College. The agent told him that the house would only be let on lease, and that he was in treaty with a party about to purchase it. He (Mr. Fleming) pointed out, in a letter to the Duke of Bedford, that the building was a suitable one, but that they were a poor profession, and had not money to buy new premises; and by the same post he had written to Col. Kingscote, asking him to use his influence with His Grace. He afterwards received a letter from the Duke, stating that he had referred the matter to his agent in London, at the same time remarking that the inhabitants in the square would

not like a public building in their midst. He was not satisfied, and applied again to the Duke, who said he had no choice in the matter but to leave it to his agent, as he was responsible. He thought the only course now open was an appeal to the public through the House of Commons, because he thought the position of the profession at present was a disgace to the country. He thought the way in which they had been allowed to toil and struggle did not reflect credit on a great country like ours. If the public knew the position in which the profession was placed, and what was done for other public bodies, which did not render so much service, he was quite sure they would consider their prayer, and grant them a proper building. He felt almost convinced that some members of the House of Commons, who were very much in favour of the profession, and had such a large stake in the interests of the country, would gladly bring forward and support any motion which had for its object assisting the profession in this matter. He should not like the Council to leave the present building until they had something superior to enter into.

Mr. GREAVES said he was sure that nobody wished to see the profession raised so high as Mr. Fleming did. Neither the Government nor Parliament would respond to their call, and they must, therefore, rely upon what they were, and be content to be modest in their expectations and reasonable in their demands. He counselled the purchase of the house in Fitzroy Square as being suitable for the purposes of the Council, and moved a resolution to the effect that some member of the House Committee be authorised to wait upon the agents for the purpose of negociating for such purchase, and to offer £3,000.

Mr. FREEMAN seconded the resolution.

Sir FREDERICK FITZWYGRAM said that, without advocating the purchase of the house in particular, if the Council wanted a good and cheap house they could not have it in a fashionable locality, and it ought to be remembered that the instructions of the House Committee were to get a house somewhat north of the present one, and between it and the Royal Veterinary College, for the advantage of the students : and he thought it would be admitted that there was scarcely a fashionable locality between Red Lion Square and St. Pancras.

Mr. FLEMING said he meant, not a fashionable locality, but a respectable locality. He begged to move, as an amendment to Mr. Greaves' motion, that no steps be taken for the purchase of the house until further attempts had been made to receive assistance.

Prof. AXE seconded the motion, believing that the time was not far distant when they would be able to obtain a considerable amount of political influence to bear on the demands by the profession for pecuniary assistance. He thought it better to defer the matter for the present, as he felt sure that by-and-bye they would be in a position to purchase such a property as would not only give satisfaction to, but also bring credit on, the profession.

Mr. Fleming's amendment was then put to the meeting, and lost, and Mr. Greaves' motion was put, and declared carried.

Mr. HARPLEY said he should not have voted for Mr. Greaves' motion if he had thought that a price was to be stated. He was of opinion that the matter should be referred to the next quarterly meeting, and that in the meantime the Secretary or the House Committee be instructed to ask what price the house could be purchased at.

Mr. GREAVES said he would withdraw his former proposition, and propose that the House Committee be instructed to have an interview with the agents for the house in Fitzroy Square, and ascertain the lowest price at which it could be purchased.

Mr. FREEMAN seconded the motion, which was carried.

The SECRETARY then read a letter, dated Nov. 18th, 1879, from the surveyor to the estate, asking for some additional improvements to be made on the premises 10, Red Lion Square.

After some conversation, it was resolved to allow the letter to lie on the table.

A letter was received from Mrs. Green-Armytage, Northlands, Bournemouth, stating that her son, in an engagement in the Zulu War, had lost his diploma, and asking that it be renewed.

The SECRETARY stated that he had sent a reply, to the effect that the gentleman in question ought to make his own personal application.

The SECRETARY read the following letter from Dr. Dunsmure, relative to an application made to him for refunding fees which were said to be overcharged.

"Mr. A. McKenzie,
"6, Lute Street, Aberdeen.

"Edinburgh, November 8th, 1879.

"SIR,—You are quite right in stating that the fee for the diploma of the Royal College of Veterinary Surgeons is £10 10s.

"The bye-laws of the College enact that every rejected student, before re-examination, must pay a fee of three guineas.

"In July, 1877, you paid £7 7s.; you were rejected, and consequently paid three guineas when you came up a second time for your minor, in January, 1878. You then paid, or should have paid, one guinea for registration, that made eight of the ten guineas.

"In January, 1879, you paid three guineas instead of two, from your not having told me that you were under the old rules; but, as you were rejected, you only paid two in April instead of three, thus making ten guineas for the diploma and the remainder for your re-examinations.

"(Signed) JAMES DUNSMURE."

On the suggestion of Sir F. FITZWYGRAM, the Secretary was instructed to reply to Dr. Dunsmure, to the effect that the legal decision was that only those fees which were received for successful candidates contributed towards the diploma. In consequence of that decision a bye-law was drawn up charging three guineas for each unsuccessful candidate. Previously they came up for nothing, and in consequence of this the College was nearly insolvent.

Mr. FLEMING incidentally pointed out the necessity of the bye-laws being in accordance with the charter. He thought that bye-laws drawn up so obscurely, so that nobody could understand them without the aid of a lawyer, required much amendment. The charter would almost mislead any one with regard to the fees for examination and the diploma.

The SECRETARY stated that a letter had been received from Mr. F. Payne, Devizes, and another from Mr. W. B. Fretwell, both rejected candidates. They had presented themselves three different times and were rejected, and wished to know whether they could again present themselves for re-examination.

After some discussion as to the merits of the two cases, and as to the bearing which Bye-law 34 had upon them, the Council came to the opinion that the two applicants were ineligible to present themselves at Christmas, and that they would have to recommence their studies before presenting themselves before the Board of Examiners.

Mr. HARPLEY said he had received a letter from the Secretary of the Royal Agricultural Society, asking what steps the Council proposed to take with reference to their prizes. It would be remembered that these had not been competed for by a sufficient number of old students from the Royal

Veterinary College at Camden Town, and it was in contemplation to have some additional rules framed, so that the competition might be open to all the students of the United Kingdom. Mr. Jenkins was anxious to place the scheme before the Royal Agricultural Society, and had asked him (Mr. Harpley) for information on the subject. He was not himself in possession of any information, but as he did not wish the matter to remain in abeyance, he should be glad if the Council would give him any information on this important subject, so that he should be able to communicate with Mr. Jenkins.

The SECRETARY announced a list of fifty-three applicants for the diploma of the Royal College of Veterinary Surgeons, who hold the Highland and Agricultural Society's certificate, each certificate having been verified by the principals of the various colleges.

It was agreed that the diploma be granted to the applicants, and that their names be published in the two veterinary journals.

The SECRETARY was instructed to write to the principals of each college, asking what time it would be most convenient for them to hold the examinations in London and Scotland.

Cheques were ordered to be drawn for the current expenses at the Christmas examinations and insurances. This concluded the business of the first special meeting.

A SECOND SPECIAL MEETING

was then held, to consider the alteration of Bye-law No. 7, of which notice had been given by Sir F. Fitzwygram at a previous meeting. The effect of the alteration was to appoint at a meeting prior to the annual meeting, not less than six members of the profession to act as scrutineers in the matter of the election of members of the Council, instead of at the annual meeting; the object being to dispose of the scrutineering business practically before the general meeting of the Council, and thus allow the scrutineers to take part in the proceedings.

Mr. GREAVES seconded the motion, which was carried.

The bye-law, as altered, will read as follows :—

"At a meeting prior to the annual meeting, the Council shall choose from among the members of the profession not less than six persons to act as scrutineers, in the matter of the election of members of Council."

*Alteration of Bye-law* 4.

Mr. COLLINS moved the alteration of the above bye-law, notice of which had been given at a previous meeting. The object of the alteration was to admit of those veterinary surgeons who were practising abroad in the army having a voice in the voting for members of the Council.

The bye-law, as amended, would read :—

Add after the words "Every member," "in the United Kingdom," and the words "in the case of members resident abroad it will suffice if they forward to the Secretary, on the prescribed form, so as to reach him seven clear days prior to the election, the names of not more than six gentlemen for whom they wish to vote."

Mr. FLEMING seconded the motion.

In answer to the Secretary,

Mr. COLLINS said it was in no way intended to make it compulsory on the part of the Secretary to send the forms unless they were applied for.

The motion was put and carried, and it was also agreed that the Secretary be instructed to send the blank forms through the Principal Veterinary Surgeon to the Army, to all the veterinary surgeons abroad.

Sir FREDERICK FITZWYGRAM submitted a scheme for a general matricu-

lation examination for all the schools. As regards the London school there was no objection to the scheme, nor had Prof. Williams and Prof. McCall any objection to it ; and he had received a letter from Prof. Walley, from which it appeared that the scheme was accepted by the trustees of the Edinburgh school with some modifications.

A committee was, on the motion of Sir F. FITZWYGRAM, seconded by the CHAIRMAN, appointed, to endeavour to adjust some general scheme.

The names of the committee appointed are, Mr. Collins, Sir F. Fitzwygram, Mr. Fleming, and Mr. Robertson, of Kelso.

On the motion of Mr. GREAVES, the best thanks of the Council were awarded to Sir F. Fitzwygram for his exertions in the matter, and the Council adjourned.

## CENTRAL VETERINARY MEDICAL SOCIETY.

AT the ordinary meeting held at Red Lion Square on November 6th, Mr. Fleming, Vice-President in the chair, it was intimated that the President, Mr. H. T. Batt, had declined the office, but it was hoped he would reconsider the matter. A specimen of urine from a horse affected with Azoturia, and forwarded by Mr. Tailby, was shown, and a letter detailing the history of the case was read. The CHAIRMAN remarked that the disease was a very rare one among army horses, and he could only recollect three cases occurring among them. The name "Azoturia" was very inappropriate, as nitrogen, or azote, was a normal constituent of the urine. It was a designation given very many years ago to a kind of Chronic Diuresis in man, characterised by the presence of an excess of urea in the urine. This was not the case in the disease under consideration, and there was no Diuresis. If a name was to be given to the disease from the condition of the urine, it should be Hæmaturia, or better still, Hæmoglobinuria, as when the urine was examined by means of the spectroscope it gave the well-defined bands of hæmoglobin. He described the appearances and chemical composition of the urine, and alluded to its being a disease closely related to deranged digestion and assimilation. Instead of the condition being due to an excess of urea in the urine, as the name given to it would imply, it would appear to be caused by retention of urea. Few, if any, blood-corpuscles were found in the urine, only the hæmoglobin ; but where the change took place was uncertain. The onset of the malady was sudden, and recovery generally as rapid.

Mr. MOLE said Mr. Hopkin, of Manchester, told him that he rarely lost a case if he could get the bowels to act. He applied hot water to the loins, gave purgatives, and kept the animal comfortable.

The CHAIRMAN described a case he saw at Aldershot. The animal was an army horse, and it died. He found the liver in a fatty condition, its capsule very easily stripped off, and the visible mucous membranes of a deep yellow colour. The kidneys were large, and the small veins plugged with clots. The horse died within three days after being attacked.

Mr. BURRELL, junr., said that, as a rule, in the disease there was a loss of power in one of the hind limbs. He attributed the disease to the horse being fed too freely while resting for two or three days. Immediately before an attack the animal was always in excellent spirits, and people would remark they never knew it to be so lively. But after proceeding a mile or two the symptoms appeared ; there was profuse sweating, great distress, with lameness of one of the hind legs. The symptoms did not manifest themselves until the horse was exercised and the circulation increased. He did not recommend the employment of slings. It had been asserted the disease only affected mares, but he had seen it in geldings. He usually gave small doses of belladonna. The action of the kidneys must be kept up. When

not slung and tolerably quiet, a small dose of laxative medicine does good sometimes—it is unwise to give a full dose. The urine should be examined as soon as passed, as it soon generates ammonia.

Mr. STEEL considered Mr. Fleming's observation as to the condition of the liver, one of importance, and he would be glad if other observers could describe the condition of that organ. The alteration in the blood might be due to the bile salts in it.

Mr. SHAW agreed with Mr. Burrell in his remarks with regard to sedatives. His son had then two cases in which he gave nothing but sedatives until recovery took place. He gave belladonna twice a day.

The CHAIRMAN regretted Mr. Daniell was not present, as he had had a great number of cases, and at one time was not very successful, though now he was more so. He relied upon purgative medicines and aconite in the first instance. He, the Chairman, dwelt upon the peculiar symptoms which marked the disease.

Mr. ATKINSON had seen some twenty or thirty cases within the last three or four months among the tramway horses. He thought the best thing to do was to get the animal to the nearest stable and put it in slings. Since the strong purgative system and slinging had been adopted, not a case had been lost. He advised slinging being tried. He gave no sedative, but a brisk stimulant. Recovery generally took place in about twenty-four hours.

The CHAIRMAN pointed out that many very successful practitioners were averse to slinging, and that the slings often did harm, in some cases breaking the tail.

Mr. GERRARD was of opinion that slinging did harm ; those horses he had slung never recovered. A good bed and occasional turning over is better.

Mr. BURRELL thought that unless the horse was allowed to stand when in the slings, he frequently became suffocated. On the second or third day, when able to stand, it was better to allow him to do so. Sometimes the abdominal muscles were injured. In one case the owner had seen the horse stand, and insisted on having him slung. This was done, and it died from suffocation within a couple of hours.

Mr. HANCOCK believed slings did more harm than good, unless the limbs could sustain some portion of the weight.

Mr. GERRARD exhibited a rupture of the wall of the right ventricle of the heart, from a large eight-years'-old horse. While drawing a heavy load up a steep hill it fell down and died. The pericardium was also ruptured.

He also showed a specimen of ruptured intestine, the history of which he related. Comments were made upon it by the Chairman.

A case of *Ectopia Cordis* in a calf, with extreme contortion of the spine, was exhibited by Mr. BANHAM. It was forwarded by Mr. Wilson, of Nantwich. Particulars of the case will be published in the VETERINARY JOURNAL.

Mr. A. BROAD introduced a mirror devised to enable the nostril to be examined with safety in cases of Glanders. Various members gave their opinion as to its utility.

The SECRETARY announced that Mr. Henry Surmon was proposed as a Fellow.

Mr. HUNTING announced his intention of introducing the subject of Colic in reference to treatment at the next meeting.

Votes of thanks were accorded to the gentlemen who had introduced subjects and specimens. Present sixteen Fellows. J. ROWE, *Secretary.*

## YORKSHIRE VETERINARY MEDICAL SOCIETY.

THE concluding quarterly meeting for 1879 was held at the Queen's Hotel, Leeds, on October 30th. The President, Mr. Peter Walker, in the chair. The

following members were present—Messrs. Naylor, Freeman, James Greaves, Carter, J. S. Anderton, Cuthbert, Patterson, Parlane Walker, Schofield, W. G. Lodge, Murdoch, Beeson, Atcherley, Scriven, Deighton, Ferguson, and the Secretary. Dr. Goldie, medical officer for the borough of Leeds, and Mr. Robertson, M.R.C.V.S., were present as visitors. Excuses for non-attendance were received from Messrs. Dray, Fallding, Pratt, Danby, Joseph and John Freeman, J. L. Faulkner.

The minutes of the previous meeting were read and confirmed.

Mr. PARLANE WALKER proposed, and Mr. SCHOFIELD seconded, that John Nettleton, M.R.C.V.S., Northallerton, be elected a member of the Society—carried unanimously.

Mr. DEIGHTON nominated Mr. George Hardie, M.R.C.V.S., York.

Mr. BEESON desired to know the opinion of members as to "whether a well-defined Splint could be formed in twelve days." Several members expressed their opinion that an ossific deposit at the seat of Splint could be formed in that short space of time, either as the result of concussion, or from the effect of a blow from the opposite foot.

Mr. FERGUSON read an essay on "Swine Fever," hitherto termed the "Typhoid Fever of Swine." The essayist minutely described the symptoms of this virulent epizootic, as observed by him during the existence of an outbreak in the borough of Leeds during the past summer. The malady existed in two forms, viz., the typhoidal and anthracoid, the latter being the most virulent and quickly fatal. A number of morbid specimens illustrating the ravages of the disease in the skin, lungs, liver, stomach, and intestines, were exhibited and explained by Dr. Goldie, the medical officer of Leeds, who had taken great interest in stamping out the late outbreak. The principal topic of discussion was the cause of the Fever.

Mr. Greaves and some other gentlemen favoured the opinion that fermentative food was in all probability frequently a cause ; other gentlemen said the causes of the disease were yet enshrouded in mystery. Amongst the gentlemen who took part in the debate were Messrs. Parlane Walker, Schofield, Freeman, Beeson, Greaves, Naylor, Patterson, Carter, and Dr. Goldie.

Mr. BROUGHTON proposed, and Mr. NAYLOR seconded, a most cordial vote of thanks to Mr. Ferguson and Dr. Goldie—carried unanimously.

The TREASURER submitted the financial statement for the year, shewing credit at the bankers for £92 7s. 4d.

The PRESIDENT proposed, and Mr. PARLANE WALKER seconded, that Mr. W. G. Schofield, Pontefract, be the President for 1880—carried unanimously.

Messrs. P. Walker, ex-President, Naylor, and Lodge were elected Vice-Presidents.

The Secretary and Treasurer were re-elected.

A unanimous vote of thanks was awarded to Mr. Peter Walker for his efficient conduct as President—carried.

## MONTREAL VETERINARY MEDICAL ASSOCIATION.

THE fortnightly meeting of the Montreal Veterinary Medical Association was held in the lecture-room of the college, on November the 20th Professor McEachran in the chair.

Mr. PETER CUMMINGS read his communication on Superficial Necrosis of the Os Pedis. He described the case in full detail. The reading of the same was listened to with great interest by those present.

Mr. CHARLES ORMOND, of Milwaukee, read a very interesting paper on Bone Spavin, in which he evinced a more than common knowledge of the

nature of this disease, the causes on which it depends, and the changes that take place in the joint. In his treatment he described a method much practised by his father, Mr. W. M. Ormond, of Milwaukee, by which he claimed to be more than ordinarily successful in restoring the animal to usefulness, viz., cauterization of the joint by a pointed hot iron, inserted between the bones, by which anchylosis was produced.

A most animated discussion followed, in which the whole question was fully and intelligently discussed ; the majority favouring, as more rational, the plan taught by the President, of firing and blistering completely around the joint.

The notorious prevalence of Spavin in horses in Canada, especially in the poorer parishes, where proper attention is not paid to the selection of breeding stock, was fully commented upon. Where spavined horses or mares are used for breeding, this disease if very common, and the losses entailed by rearing worthless animals are incalculable. Too much cannot be said to urge farmers to stop breeding from unsound animals.

The meeting was one of unusual interest.

The next papers to be read, on December 3rd, are on Tuberculosis in Cattle, by Mr. William McEachran, and one on Veterinary Dentistry, by Mr. J. B. Green, Ohio.

## NEW MEMBERS OF THE ROYAL COLLEGE OF VETERINARY SURGEONS.

THE following candidates, holding the Highland and Agricultural Society's Certificate, have obtained the Diploma of the Royal College of Veterinary Surgeons :—

| | Date of Certificate. |
|---|---|
| Aitken, David, Loughborough ... ... ... ... ... | 1852. |
| Anderson, James, Glasgow ... ... ... ... ... | 1867. |
| Bain, Peter, Kirriemuir ... ... ... ... ... ... | 1863. |
| Baird, Colin C., Edinburgh ... ... ... ... ... | 1852. |
| Bale, James, Otley, Yorkshire ... ... ... ... ... | 1860. |
| Beattie, George, Longside, Aberdeenshire ... ... ... | 1850. |
| Bell, John, Carlisle ... ... ... ... ... ... | 1858. |
| Bell, Robert Thos., Bootle, Liverpool ... ... ... ... | 1874. |
| Bissett, Benjamin Mitchell, Brechin, Forfar ... ... ... | 1864. |
| Bland, George, Alfreton... ... ... ... ... ... | 1851. |
| Bulman, Robert, Morpeth, Northumberland ... ... ... | 1866. |
| Burnett, John, Maybole, Ayr ... ... ... ... ... | 1866. |
| Chalwin, Thomas, Adelaide, Australia ... ... ... | 1853. |
| Connochie, James, Ayton, Berwick ... ... ... ... | 1860. |
| Darwell, Albert Henry, Northwick, Cheshire ... ... | 1874. |
| Dickie, James, Ayr ... ... ... ... ... ... | 1859. |
| Dobbyn, James J., Waterford ... ... .... ... ... | 1868. |
| Dobson, Thomas Chas., Southport ... ... ... ... | 1872. |
| Doig, John, Wigtown ... ... ... ... ... ... | 1850. |
| Edwards, Robt. Clowes, Chester ... ... ... ... | 1867. |
| Gillespie, Alexander, Newcastle-on-Tyne ... ... ... | 1861. |
| Going, James A., New York ... ... ... ... ... | 1868. |
| Harrison, John, Buttergill, Penrith ... ... ... ... | 1857. |
| Hart, James, Oldham ... ... ... ... ... ... | 1873. |
| Hick, William, Fulford, York ... ... ... ... ... | 1851. |
| Hodgson, Septimus, Grussonthen by Carlisle ... ... | 1854. |
| Jack, Thomas, Sunderland ... ... ... ... ... | 1865. |
| Jebson, James, Bishop Wilton, York ... ... ... ... | 1854. |

| | |
|---|---|
| Kerr, Robert, Ballymena, Co. Antrim ... ... ... ... | 1868. |
| Kerr, William, Dalry, Ayr ... ... ... ... ... | 1861. |
| Lyman, Chas. Parker, Boston, U.S. ... ... ... ... | 1874. |
| MacGillivray, Alex. Ewan, Banff ... ... ... ... | 1866. |
| Malcolm, John, South Hetton, Durham ... ... ... | 1878. |
| Martin, William, London ... ... ... ... ... | 1872. |
| Mellis, Thomas, Inverurie, Aberdeenshire ... ... ... | 1862. |
| Murray, James, Castle Town, Caithness ... ... ... | 1876. |
| Pitt, John Edward, Birmingham ... ... ... ... | 1857. |
| Poole, Henry Edward, Jersey ... ... ... ... ... | 1878. |
| Prior, Thomas H., Parsonstown, King's Co. ... ... ... | 1872. |
| Robinson, George, Chesterfield... ... ... ... ... | 1871. |
| Robson, Joseph, Penrith... ... ... ... ... ... | 1856. |
| Rutherford, Edward, Terrington, York ... ... ... | 1877. |
| Rutherford, Richard, Edinburgh ... ... ... ... | 1860. |
| Scymgeour, James, „ ... ... ... ... | 1866. |
| Snowball, Matthew, Huntly, Aberdeenshire ... ... ... | 1853. |
| Unsworth, John Bell, Market Drayton ... ... ... | 1856. |
| Fulton, David, Mullingar, Co. Westmeath ... ... ... | 1859. |
| Keall, Robt. John, Epworth ... ... ... ... ... | 1871. |
| MacCallum, Alex. Inglis, Edinburgh ... ... ... ... | 1867. |
| Mitchell, Andrew, Stranraer ... ... ... ... ... | 1850. |
| Pears, Joseph, Penrith ... ... ... ... ... ... | 1860. |
| Potts, Leonard, Wigtown ... ... ... ... ... | 1859. |
| Power, William, Tipperary ... ... ... ... ... | 1877. |

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# Army Veterinary Department.

*Gazette*, November 25th.

VETERINARY DEPARTMENT.—Veterinary Surgeon Edwin Thomas Cheesman, 5th Dragoon Guards, to be Veterinary Surgeon, First Class. Dated 20th November, 1879.

*Gazette*, December 5th.

VETERINARY DEPARTMENT.—The undermentioned Veterinary Surgeons on probation to be Veterinary Surgeons—A. W. Mason, E. Day, C. Rutherford, E. W. Goldsmith, K. Lees, A. D. Drake, F. W. Forsdyke.

*Gazette*, December 16th.

ROYAL ARTILLERY.—Veterinary Surgeon W. J. Masters is placed on temporary half-pay.

*Government Gazette*, Cape Town, August 18th.

CAPE MOUNTED RIFLEMEN.—Scott Dawkins, Esq., M.R.C.V.S., to be Veterinary Surgeon.

The following is the adaptation to the last Army Warrant, of the pay and allowances in India, which has been recently published there.

"In substitution of G.G.O. No. 504, of May 22nd, 1865, the Right Hon. the Governor-General of India in Council has notified the following revised scale of pay and allowances for veterinary surgeons serving in India :—

| Rank. | Pay and Indian Allowances per mensem. Rs. | a. | p. | English Pay per diem. £ | s. | d. |
|---|---|---|---|---|---|---|
| Principal Veterinary Surgeon in India ... ... | 1,183 | 2 | 0 | 1 | 5 | 0 |
| After 25 years' service ... ... | 1,207 | 7 | 7 | 1 | 7 | 0 |
| ,, 30 ,, ,, ... ... | 1,244 | 0 | 7 | 1 | 10 | 0 |
| Inspecting Veterinary Surgeon... ... | 1,000 | 15 | 0 | 1 | 5 | 0 |
| After 25 years' service ... ... | 1,025 | 4 | 7 | 1 | 7 | 0 |
| ,, 30 ,, ,, ... ... | 1,061 | 13 | 0 | 1 | 10 | 0 |
| Veterinary Surgeons, 1st Class ... ... | 578 | 6 | 10 | 0 | 16 | 0 |
| After 5 years' service as such ... | 602 | 12 | 5 | 0 | 18 | 0 |
| ,, 10 ,, ,, ,, ... | 627 | 2 | 0 | 1 | 0 | 0 |
| ,, 14 ,, ,, ,, ... | 651 | 7 | 7 | 1 | 2 | 0 |
| ,, 30 years' total service ... | 675 | 13 | 2 | 1 | 4 | 0 |
| Veterinary Surgeon under 5 years' service ... | 377 | 8 | 0 | 0 | 10 | 0 |
| After 5 years' service ... ... ... | 401 | 13 | 7 | 0 | 12 | 0 |
| ,, 10 ,, ,, ... ... ... | 432 | 47 | ... | 0 | 14 | 6 |

"The rates of pay and Indian allowances include horse allowance at 120 rupees for the Principal and Inspecting Veterinary Surgeons, 90 rupees for Veterinary Surgeons 1st Class, and 60 rupees for Veterinary Surgeons. The rates of English pay are only applicable to Veterinary Surgeons appointed before the issue of the Royal Warrant dated April 22nd, 1878. Those appointed on or after that date receive £250 a year. Officers of the Indian Veterinary Department who may now be drawing a higher rate of pay than that given in the above table, will continue to draw such rate till, by length of service, they obtain an increase of pay. The rates of pay sanctioned by this order will have effect from August 1st, 1879.—Allen Johnson, Colonel, Secretary to the Government of India."

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## Notes and News.

ALFORT VETERINARY SCHOOL.—According to the *Times'* Paris correspondent, this school is to be temporarily closed, as 220 of the 300 students broke out on Sunday, November 30th, and remained away until eleven p. m., when they smashed the windows on their return.

PROTECTIVE INOCULATION FOR CONTAGIOUS PLEURO-PNEUMONIA.—Perhaps the strongest evidence that was ever tendered on behalf of inoculation as protective of contagious Pleuro-pneumonia in cattle, was that offered, on October 31st, by the dairymen of Edinburgh, to Mr. R. Rutherford, M.R.C.V.S., when at a banquet given by these shrewd observers, he was presented with a valuable gold watch and chain, and a gold bracelet for Mrs. Rutherford, in recognition of the great boon he had conferred upon them "by his perseverance in introducing inoculation so successfully, not only in Edinburgh, but throughout Scotland." Many of the leading veterinary surgeons in Scotland were present.

RINDERPEST IN MADAGASCAR, MAURITIUS, AND JAVA.—We learn that the Cattle Plague has been making great havoc among the herds in the islands of Madagascar and Mauritius. In the latter island alone more than 11,000 have died and been destroyed in consequence of the malady, which is said to have been imported from India, where, according to the information published in the Journal from time to time, and particularly Mr. Queripel's excellent paper in our November issue, it has prevailed to a most serious extent. The disorder was carried from the Asiatic continent to Madagascar, thence to Mauritius, between which a large trade in cattle goes on. This trade also extends to Port Durban, Natal, between which and Madagascar there is frequent communication; so that South Africa—indeed the entire African

continent—runs great risk of being invaded by this most desolating scourge, from the ravages of which it has hitherto been exempt. We are glad to know, however, that the authorities at Durban have adopted certain precautions which, we trust, will be found sufficient to avert the introduction of such a redoubtable disorder. It would appear that, for more than a year, Cattle Plague has raged in a portion of the island of Java, where it appears to have been introduced from China. The provinces of Bantam and Batavia are more especially visited, and large sums of money have been already expended in attempts to suppress the contagion. These attempts, however, have only been partially successful, owing to the Oriental apathy of the Javanese, who do but little to second the energetic efforts of the Dutch Government and its veterinary police.

ANTHRAX IN SOUTH AFRICA.—It is reported that a disease, known to the Boers as *Milt-zeik* ("Splenic Apoplexy"), is just now proving very fatal to horses in the Transvaal. Horses attacked by it die suddenly, without any premonitory loss of condition or appetite. It is stated to be quite distinct from the epizoöty known as the South African Horse-sickness.

FRENCH ARMY HORSES.—The *Broad Arrow* remarks that the wear-and-tear of horse-flesh must be a formidable item in French military expenditure. There are eight times as many army horses employed in France and Algeria as in the United Kingdom, and the wear-and-tear appears to be in a much higher ratio. The mortality alone is 50 per cent. higher than in either the English or the German army, according to the showing of *L'Armée Militaire*.

CATTLE PLAGUE ON THE CONTINENT.—We learn that this disease has again broken out violently in the city and district of Warsaw, about 130 head of cattle having been slaughtered. In the district of Sochaczew the scourge has also been making great ravages, and the most stringent measures have had to be adopted. It prevails in thirty-four localities in Carinthia and nine in Styria, and one case has been discovered in the Vienna market. Its ravages are also experienced in Croatia and Slavonia, as well as several provinces in Russia.

THE ETIOLOGY OF ANTHRAX.—M. Pasteur, at a recent meeting of the Academie de Médécine in Paris, stated that a sheep died of Anthrax in a field in the department of Eure-et-Loire, at some distance from any knacker's establishment. The shepherd therefore dug a hole in the ground, and buried this anthracoid sheep. The next year the surface of the ground teemed with millions of germs. In a counter-experiment, M. Pasteur allowed some anthracoid blood to fall on the ground ; it became changed into germs, which could be taken out of the earth a year afterwards. He asks how, in face of such facts, it is possible to retain any doubt as to the veritable origin of Anthrax in the department.

RABIES IN THE WEST OF ENGLAND.—The *Dorset Chronicle* says that Rabies has extended to the kennels of the Devon and Somerset staghounds. The pack had been got together to replace a former pack which were destroyed, owing to the appearance of Rabies among the dogs, and now it is feared the present pack will meet the same fate.

CONTAGIOUS PLEURO-PNEUMONIA AND INOCULATION IN FRANCE.—At a late meeting of the Société Nationale d'Agriculture, M. Bella called attention to the serious fact that Contagious Pleuro-pneumonia is prevalent to a considerable extent in the environs of Paris, and he commented with some severity upon the incomprehensible apathy of the administration, which appears to stand idly by and suffers the free passage of diseased beasts from market to market, as if powerless to interfere. M. Bouley remarked that Pleuro-pneumonia arises from contagion alone, and that its spontaneous origin is a myth. This being the case, the true remedy is in the hands of the au-

thorities, whose duty it is to put in force the existing prohibitive laws, which are amply sufficient for the purpose. With respect to the extraordinary inaction of the administration, he supposed it must be attributed to the state of transition in which the law on the subject now stands, new regulations being under consideration, and awaiting the sanction of Parliament. As regards the question of inoculation, he believes its value cannot be denied, though many persons who practise it have little or no faith in its efficacy. Certain districts of France which have adopted it, appear to have experienced favourable results, and in any case it would be unreasonable to reject without trial a possible protection which is, at all events, always free from danger, and not unfrequently of real efficacy.

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# Correspondence, etc.

## THE NEW MEDICAL WARRANT.

*To the Editor of the* VETERINARY JOURNAL.

SIR,—Although the new Army Medical Warrant is not yet promulgated, yet the schedule of effective and non-effective pay has been published. A surgeon obtains the rank of major on twelve years' service with £1 a day pay, and is further permitted to retire at twenty years' service on the same amount, viz., £1 a day for life.

Let us contrast the liberality of these sums with those accorded to the members of the Army Veterinary Department by the Warrant of 1878. A veterinary surgeon never attains the rank of *either captain or major for length of service;* and at twenty years' service, if ranking with a lieutenant, is in receipt of 14s. 6d. a day, and should he elect to retire in that grade at twenty years, is presented with the munificent retirement of 7s. 3d. a day. Assuming, however, he is fortunate enough to obtain his promotion to the rank of captain at the time he becomes eligible, he will then be in receipt of 18s. a day at twenty years' service (*i.e.*, a less sum than the surgeon attains at twelve years), and his retirement at twenty years will be 9s. a day.

Some say we must never hope to compare the status of the two departments. They are right! The medical has made headway by going forward, we have been trying to do the same by walking backwards.

Yours obediently,

"VETULA AVIS."

## INOCULATION FOR PLEURO-PNEUMONIA AND GLANDERS.—TETANUS.—DIFFICULT PARTURITION.

*To the Editor of the* VETERINARY JOURNAL.

DEAR MR. EDITOR.—It is with great pleasure that I solicit the insertion in your valuable Journal of the following gratifying circumstance. In the *Edinburgh Courant* of the 1st November, I read that Mr. Richard Rutherford, M.R.C.V.S., was entertained at dinner, in the Ship Hotel, Edinburgh, on the evening of the 29th September, and received the presentation of a gold watch and chain from the dairymen of that city and other friends in Edinburgh and Leith as an acknowledgment of his successful efforts in suppressing Pleuro-pneumonia in cattle. One hundred gentlemen were present, the chair was occupied by Mr. George Taylor, of Leith; the duties of croupier being discharged by Mr. W. Cooper, Edinburgh. Amongst those present were Professor Williams, Mr. Reid, V.S., and many others of his professional brethren. After the usual loyal and other toasts, Mr. T. Haddow proposed the health of Mr. Rutherford, and, in the name of the subscribers, presented him with a gold watch and chain, also a handsome gold bracelet for Mrs. Rutherford. Mr. Haddow dwelt on the great service rendered to the

dairymen in Edinburgh and Leith, stating that by his system of inoculation he had entirely put an end for the present to the disease of Pleuro-pneumonia. The toast was responded to with enthusiasm, afterwards Mr. Rutherford made a few suitable observations in reply. Among the other toasts were "The Veterinary Profession," the "Dairymen and Cattle Salesmen of Scotland."

Now for a few remarks on the efficacy of Hewlett and Son's hypodermic solutions. During this year I have been called to seven cases of Tetanus, five in colts after castration, two in thoroughbreds, arising from injuries, all of which I am very pleased to say, perfectly recovered under fourteen days by the use of the injectio coniæ and strychniæ alternately used; I cannot, in truth, speak too highly of them, and strongly recommend them to the notice of my professional brethren. Have also met this year with some of the worst cases in calving that have come under my notice for the past twenty-three years. The other day, at Rev. W. Finch's, Woodlands Park, Kingston Hill, near Wimbledon, I was fetched to a short-horned cow, which had been endeavouring to calve during six hours prior to the despatch of the messenger. On examination I found two heads and four fore-feet tightly locked in the pelvic cavity. To move them one inch was impossible. Finding my patient very weak from straining and pain, gave her a pint of brandy in a quart of linseed tea, took off my coat and bared both arms though it was raining hard, procured the assistance of nine strong road excavators and commenced work by inserting the hooks in the orbits of one head. In half-an-hour, by constant traction, the head was moved into the vagina; removed it, corded one fore-leg and amputated that at the shoulder. Served the other in a similar way, then placed the hooks well into the ribs; with one strong pull of the whole nine men, the carcase came. Attended then to my patient and repeated the same dose. Left her for half an hour to recover herself, then cording both fore-feet, and inserting the hooks in the orbits, the second calf came away whole. With sacking to support the hind-quarters, and the assistance of six men, she walked to a loose box in the yard by 5 p.m. More brandy and linseed tea was then given and the general comfort of the animal strictly attended to. I had now been exactly six hours in this open field, at work nearly all that time. In spite of the advice of five or six very old-experienced farmers and dealers, I would not consent to destroy this cow, and ten days afterwards had the pleasure of seeing this animal quietly grazing in front of the pleasure grounds. Any member of the profession who chooses to apply for it, may have a copy of my cleansing drench, which I have never known fail for twenty-four years.

*Nov. 17th*, 1879. I am, dear sir, faithfully yours,
2, Springfield Road, Kingston-on-Thames. WM. FURNIVALL.

On perusing the papers on Farcy and Glanders, by Robert Ward, and on Glanders and Farcy, by A. E. Queripel, published in your valuable Journal for the 1st instant, I would remark that I have placed myself in communication with His Grace the Duke of Richmond and Gordon, in reference to the erasure of Pleuro-pneumonia in cattle from the Contagious Diseases (Animals) Act, as early as it can be brought before Parliament in the ensuing session. I have also sought the authority (through his influence) to allow me to enter certain stables in London where I know the virulent disease of Glanders exists at this present moment, and enable me, after purchasing some of the affected animals, to try and effect their cure. It may be a bold thing to assert, but nevertheless it is a solemn and true fact, that I have this year cured upwards of 1,200 head of cattle by inoculation, and seven bad cases of Farcy in horses; and so anxious am I to remove the stigma hurled at our profession, that we are powerless to treat these affections, that I have

informed his grace that I am prepared to spend the sum of five hundred pounds of my own income in endeavouring to combat both Glanders and Farcy by the simple process of inoculation. WM. FURNIVALL.

*Dec. 4th.*

## ON THE RELATIVE POSITION OF THE ROYAL COLLEGE OF VETERINARY SURGEONS TO ITS MEMBERS, AND THE WELFARE IN GENERAL OF VETERINARY SCIENCE.

*To the Editor of the* VETERINARY JOURNAL.

SIR,—Recent events occurring within the council chamber of the College in Red Lion Square have proved that our "governing body" does not, if it ever did, understand the true position it should hold and maintain with regard to professional duties and interests. Therefore, if the present movement does no other good, it will have to be credited with rousing the Council to acquire its proper and lawful position and duties for the first time on record. As your readers are aware, and I trust every member knows, the Council have determined to take counsel's opinion on the duty it owes to its members and Fellows, by having all and every such parts of the Royal Charter of Incorporation, together with the Bye-laws framed under its dictum, wherein the members of the said body corporate have power or voice to be heard on matters of importance or moment, otherwise than at the *annual general meeting* of such body, convened by the then President. Aside from such legal opinion, let us take a plain, common-sense view of the subject. The Royal College surely exists for the profession, and not the profession for the Royal College. The profession already existing was found parentless, and the R.C.V.S. was created or called into existence for the profession, to guide, rule, regulate, and protect such profession ; to examine and determine the fitness and qualifications of students from all colleges and schools, fixing and determining such sums of money to be paid by such students . . . . or otherwise ; and generally touching *all matters relating to and connected with the said body politic or corporate.*

In common sense this is most plain and easy of apprehension. How the Council failed to see the same, and not to act in accordance with the "requisition" was surely not because it could *not*, but because it wished *not* to see, and when pressed by *two* of its members, resolved to have recourse to legal opinion on the point of *compulsorily seeing*. This, in my humble opinion, was and is a grave error, for so much has been so well done to bring the body together, that it was hoped that this one and only "evil sore" would soon have been taken in hand and radically cured, without fear, trembling, equivocation, or mental reservation of any kind, by the profession's dear parent.

Be all this as it may, the matter will never rest until it is remedied ; and if the Governors of the Camden Town school take the matter in hand themselves without a deputation, it will be wise ; and although it may be said by the "weak-minded" "it will shew weakness to yield to coercion," I deny it, and so will the "strong-minded ;" for it will be evidence that the Governors of the school are most anxious to place themselves on terms of sound friendship with the practitioners, whether they are its own graduates or not.

The profession should consider seriously how it is represented in the Council. I have every respect for each of the colleges—more especially my own, the R.V.C., and hope always to see it lead the van ; but in a lawful and just way all the schools should be equally represented, and it should not be lawful for more than one professor from each to have a seat on the Council ; and if there are governors to each college who are members of the body, it should not be lawful for more than one governor from each college to have

a seat. The remainder of the members should be made up from the ranks of the profession; thus the profession would be equally and fairly represented.

Let it be distinctly understood that I have the highest opinion of those gentlemen who represent the profession at the board of Governors of the R.V.C., and am convinced they would do that only which *they thought* would tend to the advantage of the practitioners. But I ask, How are they to understand all this? Can a civilian appreciate the *real hardships* endured by the soldier during a campaign? Can he faithfully explain them? Can the soldier do so? If yes, then by all means let him. Army veterinary service is very different indeed from civil veterinary service; the former is a gentleman's life if the man hath "manners;" put him, thus endowed, in civil life, and he would find he was too much the gentleman for the general public. For in these modern times the young "vet." cannot take a position; it is the exception if he does acquire the position, and then it is only with a select few, who really appreciate us—I allude to country practice. What is the cause of all this? Can military gentlemen answer truly? Certainly not! Mr. Fleming is the only military gentleman who has made himself perfectly acquainted with the condition of veterinary science and its practitioners in the United Kingdom, and we have his opinion. Surely he is too well known for it to be thought he is to be won without convincing proof. I trust I may not be considered to be speaking invidiously when I say, that it occurs to me that the R.C.V.S., has never taken its proper position, and I fear never will unless more energy and emulation be brought to bear. The institution is not even recognised as a scientific institute. Look over the various yearly journals wherein you find a list of scientific institutions, and although every other can be found—even the Royal Veterinary College at Camden Town—no mention is made of the more important "body." Take, for instance, Whittaker's Almanac, and a more recent journal issued for this very purpose, "Dickens' Sights and Institutes of London." No such institution as a Royal College of Veterinary Surgeons can be found. Why is this? This is why the general public think the one sole institute is the school at Camden Town.

If the R.C.V.S. allows matters to go on as they may, and cares not for the interests of its members—as evidenced by disinclination to act on the requisition—it matters little what does become of it. Its annual meeting and dinner are but sparsely attended (which has been often and often commented on and deeply regretted), and certain it is that the apathy will not be stamped out if the College is to exist for the Council only and the one general annual meeting, also by *law* ordained—though *legal opinion* never has been taken on this holding, by the way.

With the pass examination the member ceases to have a voice at the College, no matter on what subject; the doors are to be closed at the caprice of the Council. This should not be. There is a most important subject I have long wished to open at the College, and must wait, if counsel says so, till May next, and that subject is, What means can be devised by the members of the profession to furnish the College at Camden Town with interesting cases in cattle pathology, etc., for it appears the school is quite unable to acquire any—it is quite helpless to obtain a case for clinical instruction. One can but dispense pity on those senior students going up in January for their pass examination, who have not seen practice; and still more pity for the examiners in cattle pathology, Messrs. Mayer and Hunt. How they may contrive to sign a diploma without fear and trembling or mental reservation, it will be interesting to observe. They have my deepest sympathy. However, let all things move on as they may; no good will ever come to us unless we all unite to make teaching schools perfect. The sooner the profession considers this subject the better. The only barrier seems to be the Council, and

when the members thereof have recovered reason they will see that the present movement is not taken with any other view, so far as I do or will recognise now or hereafter, than to bring the practitioners and schools together for their general good and the advancement of the science.

My earnest hope is that the old proverb may obtain—"Out of evil cometh good."

Although so many members have deplored the "College Competition," it is sad those opulent ones who should come to the rescue will not assist. Your "Old Cockney" is an exception. When all is satisfactorily arranged, and we have settled down in peace and quiet, we can say to these *conticuere omnes* members: "Keep your mouth shut still; you have nothing to do with the professional sunshine."

One thing has struck me most forcibly, and that is, if the members of the College have no right to hold meetings, or require them to be held at any time, why is it they are and have been so earnestly solicited to contribute to the College Building Fund? It certainly will matter but little to them after they have its diploma, and have entered the business of life in earnest, what becomes of examining-room or examiners.

We will wait the deliberations of the learned counsel employed, and the result of the *Conseils de Prud'hommes.*

To close, one of the Governors told me to remember that the College was now a coporate body, and could do as it liked, and might challenge the profession to interfere. Such challenge would never emanate, I am sure, from a body of gentlemen like the Governors. They would be only too pleased to assist the business, and bring about peace and goodwill. If the body corporate spoke they would listen, and I am certain that eventually all the practitioners want will be granted, and with good grace.

I remain, yours respectfully,

ROBERT WARD, F.R.C.V.S.

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## THE VETERINARY PROFESSION *v.* THE ROYAL VETERINARY COLLEGE.

*To the Editor of the* VETERINARY JOURNAL.

DEAR SIR,—Will you kindly allow me a short space in your valuable Journal in order to review a few of the points connected with this subject, so that we may fairly see the objects, etc., of the anticipated meeting of the profession?

The "Honest Competition," "Grievances," or whatever term is given to it, *seems* to have first commenced with a letter on *Our Fees* in the VETERINARY JOURNAL (vol. vii., p. 289). This was responded to in the next month's issue of the same Journal, when complaints concerning the fees charged for the examination of horses at the Royal Veterinary College are first brought publicly before our notice by Mr. Thomas Moore, who, I have no doubt, was prompted to do so from practical experience of the competition he complained of. His statements seemed to open the eyes of other practitioners, for we see in the December number for 1878 that "Artemus Secundus" was rather astonished at Mr. Moore's statements, as he says:—"'Tis sad news for me; for I have just arrived in London to try honest competition. However, as far as examinations are concerned, I must say I am out of it; for who will pay a guinea when a professor can be employed for so small a mite?" This was followed by another from Mr. Moore in the January number of the VETERINARY JOURNAL, 1879, showing that certain horse-dealers produced the certificate (obtained from the cheap examinations we are complaining of) when a gentleman was purchasing an animal—for which the certificate was

given (?)—and so prevented the purchaser from calling in a veterinary surgeon for that purpose.

In the February number we notice a complaint of another kind, although equally just in our opinion, viz., that of the professors demanding high fees for examining horses in disputed cases. This was followed by another, contending that "the privileges offered to subscribers of the Royal Veterinary College are necessary to the life of the institution as a teaching school, and with occasional crack-brained exceptions the practitioners of London have always displayed a spirit of generosity and self-denial worthy of the cause they espoused. The educational department of our profession is, and must ever be to a greater or less extent, a tax on those who follow it, just as the hospitals of London are a tax on medical practitioners; and it is gratifying to know that the impost is borne with grace and liberality, and that the sore-headed growl which Mr. Moore has initiated is not likely to be taken up by right-thinking men."

The next movement in the matter was a meeting of the London practitioners held on May 6th, 1879, to consider the question at issue ; but as nothing of importance was brought forward, the meeting was adjourned until June 5th (see VETERINARY JOURNAL, vol. viii., p. 431). At the adjourned meeting, the proximate income of the College and the advantages which the subscribers obtain were pretty accurately put before us, as well as the class of persons on the list of subscribers, viz., wealthy persons, companies, and firms, including dealers ; the price charged for shoeing horses, viz., less than practitioners can afford ; that cases were received into the College, although it was known to the authorities that the said cases were in the hands of the local practitioner ; that the College was used as a repository for gentlemen's horses ; that the measures necessary to obtain public notice when the school was founded were no longer requisite : that our status was necessarily ruled by that of the professors, and that it was detrimental to us that the public should obtain advice from the heads of our profession so cheaply (see VETERINARY JOURNAL, vol. ix., p. 46).

Next, we have our attention drawn to the fact that the principal in his report, led the governors to believe that it was the "*cheap practice*" (which the school had justly started for the benefit of its pupils) with which the profession was quarrelling, and the JOURNAL goes on to say:—"The metropolitan veterinary surgeons do not object to the '*cheap practice*' among the animals of poor people, but they do protest, and will protest yet more energetically, against the system of disgracefully cheap practice among animals belonging to a body of subscribers, and not one of whom comes under the designation of poor, but the majority of whom are among the wealthiest of the land" (VETERINARY JOURNAL, vol. ix., p. 216).

Also a letter stating that the council-chamber of the Royal College of Veterinary Surgeons was not put at the disposal of the veterinary profession for their meeting, although it was used for a purpose extraneous to the College business soon after.

The next meeting of the practitioners was held on October 1st, 1879, when it was pointed out that "the Royal College of Veterinary Surgeons represents our profession, and is entrusted with its welfare. If any one should move in the matter, it should be the President and Council, and in the bye-laws it is so laid down. It is the better course, and far more preferable than going to the governor of the Royal Veterinary College." For it was suggested that "if we went to the governors direct, we should be stigmatized as a few grumblers who cannot get on, and have some croaking because we are under a cloud." It also showed that the country practitioner was also involved in the movement ; for we read:—"A number of subscribers living in the country receive visits from the teachers, and send horses up to London to be treated, so that the pernicious effect of the system extends far, although it is principally

felt in London." Also, that it was *not* the well-to-do practitioner that need complain, but that it was the young beginner in life who felt it most.

It was also suggested that "the Camden Town College must have advantages for the students to see practice;" that "the institution supplies material to make surgeons (veterinary), if the student only makes use of it." On the other hand, it was equally plain that the present system did not effect this purpose, for the animals sent there were *too good* for that object, and "hitherto the subscription system has not tended to enlighten the students as to practice" (VETERINARY JOURNAL, vol. ix., p. 352).

In the same number of the Journal we read an excellent editorial, pithy and to the point in every sentence, showing (as "An Old Cockney" puts it) "himself to be truly a man of courage, an *Englishman* who can well speak his mind when occasion demands, without the least semblance of fear."

Lastly, that the movement is no new idea, for the writer "talked to Spooner" about the "co-operative" or "subscription" business years ago, and he (Spooner), in his usual 'cuteness, answered, "Well, to start the College this system was adopted; and if the practitioners object to it, they should speak to the governors—I cannot complain." The same writer also says he was sorry he did not read the names of *leading* members on the requisition paper, but justly appeases his sorrow from the fact that "although *their names* were not there, we find others of equal *professional* value—rising young men, whose brain, *not purse*, will raise our standard high."

Sir, after reading the above sentences, let us consider for a moment the origin of this agitation. Was it the letter on "Our Fees," in Vol. VII. of the VETERINARY JOURNAL? We all know it was not, for in Vol. I. of the VETERINARY JOURNAL there is an editorial upon the subject, and we are told that Mr. Mavor and other bygone practitioners had strong opinions upon it. Therefore, it cannot be said that this movement commenced from any controversy between Mr. Moore, the teachers of the London School, or any body else, although we may form our opinion concerning our position when we hear and see the treatment that gentleman received from the principal of that school. However, as far as most of us are concerned, the movement is perfectly independent of any individuals whatever, and no man can (although we have heard they do) justly accuse us of any malice or ill-will towards the London School or its teachers. We believe that every man who signed the petition, and most of those in favour of the movement, have the greatest respect both toward the School and those connected with it. What we want, and what we must have, before we shall be satisfied, is, that the London School should be the pattern, guide, and patron of its past and present students.

There cannot be the slightest doubt in the minds of *right-thinking* men that the charges at the College are much too low for the work done for the subscribers, and much too high for that done for their students. By this last expression we mean, that when any of us are in difficulty and require a second opinion, we are charged excessive fees, the only explanation of which seems to us is, to prevent us from asking the aid of our teachers in time of need.

Again, allowing *dealers* to have an indefinite number of horses examined and certified for a small sum, not only degrades our profession, but also give the dealers a good opportunity to cheat their clients. Thus, if a dealer receives a certificates for a *sound* "bay five-year-old horse," he can, if he chooses, produce this certificate for any "bay five-year-old horse," and so might be guilty of using the certificate, given by our profession for a *sound* animal, to deceive a customer and palm off an unsound animal upon this certificate; thus leading the public to believe that a professor in our profession was guilty of falsely certifying as to the soundness of the animal, and consequently bring us innocently into disrepute.

Since the status of our profession is, and must necessarily be, ruled by that of our leading men, we deem it necessary to ask them to fix their standard on a higher basis. Hence our agitation.

If the report we read with regard to the principal of the London School's conduct in leading the governors to believe what he knew to be false, is correct, then all I can say is, I think he is acting quite contrary to what he professes to preach (on Sundays), and moreover confirms our opinion of his etiquette towards the members of the Royal College of Veterinary Surgeons. We do not say this with any ill-feeling, but simply on the "right" and "wrong" principle. Is it right? or is it wrong? Judging from what has been said, we thought it would be best and our duty to go to the leaders (the President and Council) of our profession and ask them to officiate for us; and I sincerely hope, that although they may feel themselves placed in a somewhat awkward position, they will see their path clear to carry out our claim, and we, as the petitioners, must take all censure which is passed upon them for doing their duty. We are a small body, and a young profession, and cannot bear any burdens or drawbacks such as we are complaining of, but must, to stand, be united, and assist one another with a professional brotherly feeling. We cannot help thinking we have taken the right step, although it appears an unpleasant one.

If I may trespass a little further on your space, I should like to draw your attention to what appears to us to be mistakes:—1st. We have noticed letters and articles in local papers concerning this movement, and we cannot help thinking that our so-called "Grievances" ought not to be published and circulated outside our own circle. Therefore we sincerely hope that no more cutting or petty fault-finding articles will appear in any local paper, so long as we have such an independent journal as yours at our disposal. 2ndly, Those members who do not agree with the movement should not allow their temper to get the upper hand of their common-sense. For it seems very much like it when we hear such expressions as, "Why, there is not a man that signed the petition can change a £5 note;" or, "Why, there is not a man who can earn a shilling for himself," etc., etc. All such statements may be quite true, but we think you will allow that all of us endeavour to alter them. Therefore before fortunate, well-to-do, lucky practitioners, whose pockets are deep enough to prevent them from caring anything about their fellow-men or the advancement of their profession, throw out such mean and, in our opinion, degrading expressions, it would be well if some of them would look back upon their younger days, when, perhaps, they had some such thoughts as we poor moneyless and brainless individuals have, but had not the courage to think *loud* enough. But after all this, I hope such petty jealousies will vanish, and each man, for and against the movement, will see that some of the petitioners at any rate are earnest, unbiassed, and simply want "right." Therefore we hope we shall be able to have our meeting, and the subject properly discussed from this one point of view, and come to some amicable conclusion.

I am, my dear sir, yours truly,

A LONDON GRADUATE AND "PETITIONER."

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## THE RESPONSIBILITIES OF VETERINARY SURGEONS.

*To the Editor of the* VETERINARY JOURNAL.

SIR,—I read with great surprise the letter of Mr. Fraser in the last number of the VETERINARY JOURNAL, and I ask space for a few remarks in reply.

His letter may be described as a collection of reckless and sweeping accu-

sations, and it will be my endeavour to show that he has most unfortunately judged the whole body by its worst part, and that he has been most unjust to the profession of which he is a member. First, he says that "it has not unfrequently been remarked to him that any veterinary surgeon or professor can be induced to swear according to instructions, provided a sufficient consideration be offered." This is an insinuation almost too monstrous to merit refutation; but unfounded and disgraceful as it is to those who have made it, yet such a remark may impose upon the ignorant and unreflecting mind. I venture to say that few members of the profession would tolerate such a groundless and malicious slander. Mr. Fraser would seem to have been particularly unfortunate in meeting enemies of his profession.

He goes on to say, alluding to a veterinary surgeon—and by the way in which his letter is worded apparently intending to include all—that "there is not a spark of honour to which you can appeal." Then he continues that "a veterinary surgeon can rarely be called a gentleman in ordinary behaviour," and he proceeds to say that there is in the profession an almost entire absence of the moral sense!

Really all this is very sad, and such opinions will occasion much surprise, in the minds of veterinary surgeons, that any one should be found to broach them in this nineteenth century. We all of us know that no race, even of savages the most degraded, has yet been found destitute of moral sense. But the fact is, that veterinary surgeons are universally credited with a great deal of it, as is proved by the public constantly and confidently giving to them the trust of examining very valuable horses for soundness; and so worthy have they proved themselves of this trust, that rarely does a prudent man buy a horse without the protective intervention of a veterinary surgeon. It is absurd to argue that people would pay a fee, and anxiously wait the opinion and advice of a man whom they considered destitute of the moral sense. And it is still more absurd to think that Government would pay cattle inspectors all over the country if that were the case.

But it is useless to discuss this matter further, as the public show us in almost every possible way that not only do they credit us with a very high moral sense, but also, even in this money-making age, with a high sense of honour. In no way can a man more show this than when he gives you the control of his money, which he practically does in many different ways to the veterinary surgeon.

As to the conversation of veterinary surgeons, it is true, and it is a matter for congratulation, that when a few of them meet, their talk is chiefly professional. It only proves what an interesting avocation we follow, and it is universally allowed that it is one of great humanity (for its intention is to alleviate pain and suffering), that it is truly a science, and of the greatest utility to human progress and prosperity. That it should be the most interesting topic to veterinary surgeons, redounds to their honour and credit, and it can never cease to be so until all idea of advancement has been swamped in a degrading apathy, which it is to be hoped we may never seriously regard as possible. The same may be said of all professions which possess a healthy and vigorous vitality.

As to general information and literary culture, my personal experience is that I meet very many veterinary surgeons of wide and varied reading.

Mr. Fraser is quite right in describing an inordinate love of money as withering, and we shall go with him there. I suppose, however, that no body of men perform more acts of unobtrusive charity and benevolence than veterinary surgeons. If it were proper to do so, how many names could I write here to prove this statement!

I may take this opportunity to remark upon the very inadequate charges made by some veterinary surgeons for their services. I will here particu-

larly name one. I have said, and too much stress cannot be laid upon it, that the public place great confidence in veterinary surgeons for the examination of horses. It is a great trust, yet the fee for it is generally only ten shillings and sixpence. It is *absurdly low*, and it may be asked if the time has not come for raising it to one guinea. Mr. Paley and Mr. T. D. Lambert, of Dublin, about three years ago began this practice, and they find it pays far better and far more than the old half guinea system. In Dublin, a man giving only twenty pounds for a horse gladly pays an extra guinea for the veterinary surgeon's examination ; in fact, it is found in practice that the guinea soon begins to be looked upon as the customary and natural fee. When the above-named gentlemen first gave notice of this increase of charge, there were the usual croakings of the faint-hearted, that it would never do ; that people would dispense with the examination ; that they would only pay it for expensive horses, that the half-guinea men would soon get all the work, and other nonsense of a similar kind ; yet the result has now conclusively proved that the guinea is as willingly paid as the smaller fee. It is only to be expected that the larger charge should inspire more confidence ; such is human nature. Remember, also, that no additional responsibility is incurred by these veterinary surgeons who disclaim any pecuniary liability for their opinion, should it unfortunately turn out to be erroneous, and I say it *advisedly*, that I believe the law would be found on their side if the legality of this view should be tested.

Instead of writing to discourage veterinary surgeons, as some weak-kneed members of the profession do, I will here say that many of them are not independent enough with those who employ them. Those, however, who are successful, have been much helped in becoming so by having a large share of self-respect and a due sense of their own dignity, which leads them to soon place any one who tries to slight them in his proper position, and makes him disinclined to repeat the experiment. They have the tact to do this, as a rule, in a quiet and gentlemanlike manner, which at once places them on a pedestal superior to that of the offender, and ensures his involuntary respect. A very clever French writer has well said, "*Il faut se faire valoir*," and those who use this maxim with discretion will find how much valuable wisdom is contained in it.

Veterinary surgeons have to deal with all sorts and conditions of men, and they should, where they are in the right, stand by each other. Surely in law cases we can strive to make an array of our witnesses on opposite sides a thing of the past. Difference of opinion there will always be ; there is more in the medical profession than in ours, but the former has been so disciplined that *esprit de corps* prevents it, except in rare cases, from squabbling in the witness-box. Is it not most desirable that the appearance of the professors of our colleges in the witness-box may be, unless called by the court, "a custom more honoured in the breach than in the observance" ?

The veterinary profession is making most satisfactory progress, and is every day becoming better educated. It is rapidly rising in public estimation, and must continue to do so. It is therefore to be wished that it will not receive stabs in the back from its own ranks, which are usually prompted by unworthy jealousy, and which should always meet with severe condemnation. It may with great justice be said that the profession suffers most from internal enemies, and that those who make war in it with words are almost always those who never do anything to help it by deeds. They play an ignoble part, and they are the croakers who prophesy failure until the benefit is achieved, but who are then the first to apply it to their own advantage.

Your obedient servant,

JAMES LAMBERT, F.R.C.V.S.,

*December 4th*, 1879. *Veterinary Surgeon, 17th Lancers.*

*To the Editor of the* VETERINARY JOURNAL.

SIR,—Pray give me space in your valuable Journal to ask Mr. Fraser, whose letter appeared in your December number, to study the character of Thersites, as portrayed in Pope's edition of Homer. He will find it in the second book of the Iliad, and it may be profitable to him, as showing what part in the drama of life it is desirable *not* to play. Your obedient servant,

Manchester, *December 14th*, 1879. "A VETERINARY SURGEON."

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## PROFESSIONAL ADVERTISING AND "SPECIALISTS."

*To the Editor of the* VETERINARY JOURNAL.

SIR,—I have had no desire till now of occupying your pages, other than in the official capacity you have hitherto received my papers ; still, the letter in your December No. on "Professional Advertising," and the strictures you make thereon, must be my excuse for asking you to allow me, as a delinquent, though not one of those immediately referred to, to attempt to justify myself.

For some years past the papers and catalogues of shows have had an increasing number of advertisements, the production of chemists, quacks, and, I must admit, of duly qualified veterinarians extolling their respective nostrums. In these, dog medicines have had a large share ; and it is not to be wondered at when we remember, first, how meagre was the instruction afforded by lectures, etc., in the College at Camden Town up to perhaps five years ago on the ailments and injuries of the dog and cat ; and next, that the indifference to the care of these animals, commencing there, becomes adopted by its graduates who, ignoring the claims to attention these animals undoubtedly have on them, has induced men outside our ranks to take up what we discard, and reap considerable advantages by pursuing it. Among the advertisements, for a long while appeared one, the writer of which affixed certain letters to his name, and who was, and is even now, generally supposed to be qualified ; many veterinary surgeons do not know to the contrary, and even if they do, will send clients there, because they do not affect to deny their dislike to treat "dog diseases," and are equally unacquainted with such a specialist among their own members. I sought to induce the publishers of the journals in which the name and accompanying initial letters appeared, to explain and withdraw them, and eventually succeeded ; as I urged that they implied a professional degree which the writer did not possess, and was calculated to mislead the public.

Finding this apathy so general among our members, some of whom do treat their cases, but would rather not, because of the want of due attention in their earlier days, or repugnance to the risk of bites, and the personal manipulation required by their owners, and also that the public have been and are constantly at a loss where to go when their household favourite is ailing, I initiated in 1875, and have continued up to now, a form of advertisement (see advertisement pages of Journal), which I believe to be free from any "touting" or "shoppy" terms as generally adopted ; if the word special, of which more anon, may be deemed an exception, and I invite the fullest criticism on it in your Journal, or by private correspondence.

It is a matter for regret that certain M.R.C.V.S. will use their degree in print as a means of working extraneous business, such as horse and dog dealing, and vending drugs like a chemist, who thinks his goods second to none ; but no amount of correspondence will educate their minds to a sense of their false position, or induce them to alter it, *if it pays !* I can assure you my advertisement does not pay as one more pompous, without doubt, would.

With the increasing responsibilities of the veterinary surgeon, it must inevitably follow that one or more veterinary surgeons will gradually be singled out as an expert in some particular branch of practice, and eventually

be oftener called in to consult on it. It may be for lameness, chest affections, surgical operating of one or all kinds, veterinary jurisprudence, cattle inspectorship, sanitary and dead meat inspectorship, horse examiner, professor, consulting veterinary surgeon only, or many other sections of our daily duties, and last, but not least, that for which I have most preference. And it is not too much to suppose that these branches will, if taken up specially, become widely known without advertising, by professional recommendation and public discrimination ; and it can only become *un fait accompli* by ceasing to be jealous of our neighbouring practitioners, and adopting the Royal College motto in practice as well as on our billheads. I notice already that some of the Fellows of the Royal College of Veterinary Surgeons and a few retiring practitioners, are adopting the title of "consultants;" they are surely specialists in a wide sense, and are appealing to their fellow-members for an acknowledgment as such, and not as intending to treat the cases they may have to see. You too are a specialist, and take first rank as our "literary" champion ; for was it not by first advertising (I use the word advisedly) as a veterinarian in the public press the nature of the remount difficulties and expected diseases in the Abyssinian campaign, and afterwards repelling every attack on our professional knowledge, as a body, made by public writers, that you eventually started this Journal, in which both sides are admitted for criticism? That medical men seldom advertise is apparent, for the names of specialists are as household words among them, and their connection either past or present with the special hospital for deformity of its kind, etc., is so well known as to need none other. It is presaging too far ahead to expect the like among us. That they do advertise, and have not lost caste or dignity thereby, permit me, in differing with you, to substantiate, by sending you enclosed circular from the *Times* of a candidate for an important medical office in the City of London. The applicant details in the first person his scholastic and medical acquirements. Very often similar letters appear from medical men of known high rank. The writer of a medical work who, in his title-page, sets forth his many qualifications to produce it and previous works, is, in my humble opinion, as much advertising himself, and honourably so, as

Yours faithfully,

Marylebone, *December 8th*, 1879. JAMES ROWE, JUN.

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## THE VALUE OF A PROFESSOR'S OPINION ON HALTING AND HOBBLING.

*To the Editor of the* VETERINARY JOURNAL.

SIR,—The serious and sad charges brought against me by Mr. Colam in your last issue, for writing that letter on the above subject, in your November number, must be met by me and dispersed ; and although at the first glance it may appear difficult, yet I feel certain I can do so most effectually, and by the time Mr. Colam arrives at the end of the present letter he will discover his errors, and that he has prejudged my meaning entirely.

At first I felt pleased to find either you, sir, or Mr. Colam had divided the epistle into sections or paragraphs, and I thought I would reply to them *seriatim*, but reflection dictates that I should reply generally, and spare your valuable space.

Firstly, I will state most emphatically that I claim to be a LOYAL AND AN HONOURABLE member of the profession in the strictest meaning or sense, and you know it, sir ; so I trust you will allow the remark to be underlined.

I utterly deny *animus*, or an evil intent with regard to Mr. Colam's society, or on the Professor's abilities. The former has done much good, and I trust may long continue to do so. I have assisted it, and ever will ; moreover, I am doing so now, penning this, as will be seen clearly be-

fore I close. Then a word as to the Professor, whom I hold in the highest esteem. I never inferred incompetency, for there is no member better qualified as a practitioner for such a task. Time and place should be chosen. I said it was most *lamentable* to see a professor in a police-court, and I repeat it—more especially so when the defendant is a poor "pig-feeder," and his *medical* witness a *quack*.

Why employ a "Nasmyth hammer" to break an egg? Surely a learned magistrate will not submit to such a system; for the poor "pig-feeder" was quite *hors de combat*—he could not command the luxury of a *Professor* as a witness, but was obliged to put up with the best his slender means could afford. Surely the intelligent lookers-on must have thought the society had a very weak case, when, ignoring the ordinary intelligent practitioner, it hauled the Professor from his *sanctum* to convict the poor "pig-feeder" with his "quack!"

Soberly and seriously speaking, what would any number of loyal and honourable members of the profession say to the picture? Is it to the interests of veterinary science and the cause espoused by the R.S.P.C.A., that our professors shall exhibit themselves in our police-courts? What will be thought of our profession, should each one of our professors so engage himself? If a professor occasionally went to give evidence as an expert on an adjourned case—for such evidence to be forthcoming it might be admitted; but to make a *common hack* of a "professor," or allow him to make a *common hack* of himself, is, I am sure, what no member, *loyal* and *honourable*, could witness without comment; and I feel sure you, sir, Mr. Colam, and the Professor—"*the trio*"—will follow me, and say that I have done my duty by directing attention to the matter.

There cannot be a doubt that many members think it leads to notoriety to see one's name in a police-court report, but no such desire can rest in a professor's mind. He is, or should be, too retiring for such notoriety. It is noble of him to assist in suppressing cruelty to the poor dumb creatures around us, which certainly does abound to a most alarming extent; but in doing so, *modesty* should dictate to them that it does not stand well in the mind of the intelligent public and a police magistrate to see them appear in "*common*."

A word about the "quack." I am somewhat astonished that neither the Professor nor officer stated that the individual was so in open court. Had they done so, I am sure the *Daily Telegraph* would never have stated he was a *veterinary surgeon*, for it is the first to expose charlatanism of any kind. The Zulu and his assegai, I will pass with the other reflections, which, I am sure are not intended in earnest, even the reference to a "real practitioner"—although I do believe the remarks on the "hanger on to the profession" are.

I have reason to know that of all our able police magistrates, the one referred to is one of the most Christian-like and kindly disposed we have, who would be the first to anticipate a case of cruelty, and who must have viewed this case as it stood in a temperate mood, and failed to appreciate the zeal of the society.

I am quite certain that Mr. Colam will succeed far better if he selects his professional witnesses from the ranks of the profession; and in a case of some interest he has the choice of some Fellows of the Royal College of Veterinary Surgeons, I believe, in the metropolis, who, as men of professional status are, or should be, at least of equal professional value to a professor, for the former have to pass a searching examination prior to obtaining the degree, whilst, as matters now are, the professors do not. I trust this will not be taken as *bad animus* or *childishness*.

After reflection has been cast over the remarks I have penned, I think my real meaning and intent will become most apparent, and that instead of

the construction placed thereon by Mr. Colam, the real object will be acknowledged, tending to the good interest of the society and the veterinary profession in general, to attain which I trust, sir, you will pardon me for staining your valuable sheets. I am, yours respectfully,

London, *December 2nd*, 1879. "RADIX."

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## COMMENTS.

IRELAND appears to be as well supplied with impostors, who "doctor" animals and put themselves forward as competent men, as England. But it would seem that in the sister island, the law—or, at least, those who live by the law—afford countenance and patronage to these accomplished and skilled individuals, if one may judge from a case which came before the Roscommon Petty Sessions not long ago. It is reported in the *Irish Times* of November 24th, that Constable Coghlan charged a "bone-setter," named Bryan Mullany, of Ballybarnon, with being guilty of cruelty to animals under the following circumstances:—It appears a carter had occasion to convey his horse to an island on Loughkey, and on landing, the horse slipped and sustained a fracture of the leg at the elbow. The defendant was sent for to attend the animal, and he proceeded to remedy a fracture at the elbow joint by putting wooden splints on the horse's knee, drawing the skin through the slits, and driving iron spikes a few inches in length through the skin and tissues beneath, in order to secure the splints to the leg. The wounds thus occasioned suppurated, the limb swelled, and the poor horse, after enduring great agony for a few days, was shot. The defendant now said in excuse that he was in the habit of "fixing" cattle and horses for the last thirty-five yeurs, and with great success. His solicitor, Mr. Metcalfe, described the defendent as a public benefactor, and said that so long as such men were to be had in the union, it was a humbug to be bringing veterinary surgeons into the place and paying them salaries out of the rates. The bench, however, thought otherwise, though they only imposed a fine of five shillings on the defendent.

The audacity and sham philanthropy of Mr. Metcalfe were only equalled by the ignorance and cruelty of the bone-setter "benefactor," and the eloquent limb of the law must have imagined the bench to be particularly stupid as to the merits of benefactors. One almost regrets he could not have sustained a similar accident, in order to allow Bryan Mullany to give him a taste of his bone-setting benevolence. Bryan should have been sent to prison and Metcalfe to Coventry.

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IT is curious how many cases of Hydrophobia have occurred within the last few years, in which the dogs that inflicted the wounds never showed any symptoms of Rabies, and were produced in good health at the inquest on the deceased persons. In about a month three such instances have been reported; the last happened in Manchester, and was that of a boy who was bitten in the face by a black retriever. About a month afterwards Hydrophobia set in, and death soon took place. The dog was shown at the inquest.

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LAST month a domestic servant—a woman, nineteen years of age—died from Hydrophobia in Aluchterderran, Scotland. Eleven years before, she had been bitten in the thumb by a bulldog kept by her parents. About two years ago she felt coniderable pain in the bitten hand.

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A correspondent states that in our professional contemporary for December, in a paper on Indian Remount Depôts, it is mentioned (p. 864) that in native cavalry regiments "every trooper buys his own horse by instalments." He wishes to know how this extraordinary proceeding is managed, and if the trooper also rides the instalments of the horse before the purchase is completed. His experience of ordinary horsemen leads him to believe that they prefer the whole horse or none; but in foreign countries strange things are witnessed. We make no comment on our correspondent's remarks, nor do we venture to answer his question, merely recommending him to apply to the courteous editors of the periodical in question for a solution of the mystery.

## ANSWERS TO CORRESPONDENTS.

PFERD.—We have much pleasure in replying to your queries. 1. In Germany the best veterinary schools are perhaps those of Berlin and Munich. The latter can boast of the distinguished teachers, Bollinger, Friedberger, and Feser. In Austria the veterinary school is at Vienna, and was until lately presided over by the well-known Professor Röll. In France the three veterinary schools at Alfort, Toulouse, and Lyons, have each their special recommendations; but under the direction of the celebrated Chauveau, the latter school bids fair to be one of the best in Europe. 2. We do not know whether the diploma of the Royal College of Veterinary Surgeons is recognised by these countries as conferring a claim to exemption from any portion of the extensive curriculum they impose upon their students. We believe it does not, and that our graduates would have to pursue the full course in order to obtain the pass certificate. 3. The best French veterinary periodicals are the *Recueil de Méd. Vétérinaire*, *Archives Vétérinaire*, *Revue Vétérinaire*, and *Journal de Méd. Vétérinaire*; German, the *Deutsche Zeitschrift für Thiermedecin*, *Archiv für Thierheilkunde*, *Archiv für Wissenschaftliche Veterinärkunde*, and the *Oesterreichische Vierteljahresschrift, für Wissenschaftliche Thierheilkunde*. 4. There is difficulty in giving advice with regard to literature in these languages. We can recommend Lafosse's "Pathologie Vétérinaire," Peuch and Toussaint's "Chirurgie Vétérinaire," Röll's "Lehrbuch der Pathologie und Therapie der Hausthiere," and Armbrecht's "Lehrbuch der Veterinär Chirurgie."

P. S.—See the article in the present issue.

Owing to the extreme pressure on our space, communications from Messrs. Robertson, Oliphant, Nunn, Hill, Ward, Poyser, Moore, Furnivall, Dwyer, as well as reports of the Liverpool, Scottish, and North of England Veterinary Medical Associations, are unavoidably held over.

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## Communications, Books, Journals, etc., Received.

COMMUNICATIONS have been received from G. Mitchell, Melbourne, G. A. Banham, London; W. Broughton, Leeds; A. Jones, Queen's Bays, Dublin; T. H. Merrick, Kettering; W. Furnival, Kingston-on-Thames; A. B. Wren, Stimbridge; J. Nunn, R.A., Afghanistan; "Radix;" D. R. Sowerby, Hull; "A London Graduate and Practitioner;" M. Hedley, Dublin; J. Lambert, 17th Lancers; J. Rowe, jun., London; J. W. Hill, Wolverhampton; C. Sheather, London; M. E. Decroix, Army Principal Veterinary Surgeon, Paris; W. Robertson, Kelso; J. Mills, Royal Horse Artillery; D. Hutcheon, Liverpool; G. R. Dudgeon, Sunderland; C. Whitworth, London, J. C. Dwyer, Royal Artillery, Woolwich.

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BOOKS AND PAMPHLETS: *H. Toussaint*, Recherches Expérimentales sur la Maladie Charbonneuse; *Longhi ed Tirinanzi*, Dizionario dei Termini, etc., delle Scienze Mediche E Veterinarie; Live Stock Journal Almanac; *E. Dele*, Experiences Relative a la Culture de la Trichinose, La Trichine et la Trichinose; *H. Anacker*, Specielle Pathologie und Therapie für Thierärzte; *M. E. Decroix*, Etudes sur la Ferrure a Glace, L'Hippophagie et les Viandes Insalubres.

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JOURNALS, ETC.: *Recueil de Méd. Vétérinaire; Wochenschrift für Thierheilkunde; American Veterinary Review; Live Stock Journal; L'Echo Vétérinaire; Journal of the National Agricultural Society of Victoria; Field; Lancet; Medical Press and Circular; Archives Vétérinaire; Œsterreichische Vierteljahresschrift für Wissenschaftliche Thierheilkunde; Der Thierarzt; Practitioner; Annales de Méd. Vétérinaire; Revue Vétérinaire; Agricultural Gazette; Mark Lane Express; Farmer.*

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NEWSPAPERS: *Melbourne Argus; Melbourne Age; Suffolk and Essex Free Press; Colman's Rural World; Irish Times; Globe; Freeman's Journal; Manchester Courier* (two copies); *Montreal Gazette; Melbourne Argus; The Trades Monthly.*

THE VETERINARY JOURNAL

AND

Annals of Comparative Pathology.

FEBRUARY, 1880.

# POISONOUS PLANTS IN ZULULAND AND AFGHANISTAN.

BY GEORGE FLEMING, F.R.C.V.S., INSPECTOR, ARMY VETERINARY DEPARTMENT.

THE value of a knowledge of botany to veterinary surgeons has long been recognized, and this recognition has had a practical result in the institution of a course of botanical instruction at the veterinary schools in this country. In this respect, it is true, we have only followed the sister branch of medicine, in which this most useful and fascinating science has for more than a century held a prominent place in the curriculum of medical tuition; while many of the most distinguished botanists the world has yet seen—Linnæus, for instance—have been graduates in medicine. But in veterinary education, botany still holds an extremely subordinate position at our schools, and it is to be feared that our graduates, as a rule, know very little more than the salient facts of structural botany—the higher and far more important division of systematic botany being scarcely, if at all, touched upon, through lack of time, opportunity, or failure to perceive the necessity for a more thorough knowledge of the whole subject. And yet it must be evident that if a tolerably familiar acquaintance with this science is necessary for the medical man, it must be still more so for the veterinary surgeon, seeing that the most valuable of the domestic animals find their sustenance

entirely in the vegetable kingdom—the pig, dog, and cat alone forming a partial exception. And if a somewhat thorough and extensive knowledge of botany is essential to the successful practice of veterinary medicine, in what we may designate "civil life," it will be conceded that for the army veterinary surgeon it is yet more required. When we consider the immense extent of the British Empire—embracing, as it does, pretty nearly every region of the habitable globe, and therefore every kind of climate; that there is rarely a period in which we are not at war in some corner or other; that more frequently than not these petty wars are carried on in uncivilized regions, about which little is known—and especially the botany; that animals of some kind or another have to be employed in the prosecution of these wars; that the food of these animals has to be obtained partly or entirely at the seat of war, and that they are exposed to great risk from eating poisonous plants;—when we consider all this, it must be granted that a good knowledge of botany is an absolute necessity for the army veterinary surgeon, from a merely professional and utilitarian point of view, not taking into consideration the opportunities he has of increasing our stock of botanical lore, were he competent to do so.

The wars in Zululand and Afghanistan, but particularly the former, have shown the force of these remarks most clearly, and the lesson will, I hope, not be lost. They have also once more given evidence of what has been often remarked, that the instinct of animals, with regard to the selection of food—striking though the manifestations of this instinct may be—does not always serve them when transferred from their native country to another in which the vegetation is strange to them.

Though a large portion of South Africa has been in our possession for a long period, and though many scientific explorers have wandered over it at various times, yet, strange to say, previous to the departure of mounted corps from this country, less than twelve months ago, to take part in the campaign in Zululand, I could discover very little pertaining to what I may term its Veterinary Botany. All that could be found was contained in an interesting paper by Dr. John Shaw, "On the Disturbing Influence of Extensive Sheep-farming on the Vegetation of South Africa"

(*Journal of the Linnean Society, Botany*, vol. xiv., p. 208), in which he speaks of a very few poisonous herbs—some *Asclepiads*, poisonous *Tripteres*, and the intoxicating *Melicæ*—the "Dronk grass" of the Dutch colonists. He states, also, that "some tracts of country are poisoned by the extraordinary increase of the *Tripteris flexuosa;* and transport riders (drivers), with their oxen—our only carrying power—have to travel through certain parts of the country without pausing, on account of the *Melicæ*, grasses which have increased to an extent scarcely to be fancied in the last two years, and on eating which cattle become afflicted with intoxication to an alarming extent." Dr. Shaw's remarks appear to refer more particularly to the Cape Colony, and he lays stress upon the need for its adopting measures "to keep one of its richest tracts from becoming a desert, or a region of obnoxious and poisonous plants." And in an excellent little work on the medicinal plants of South Africa, by Dr. Pappe, entitled "Floræ Capensis Medica Prodromus; or, An Examination of South African Plants, used as Remedies by the Colonists of the Cape of Good Hope" (second edition, published at Cape Town in 1857), *Diœcia monadelphia* is incidentally mentioned as poisonous to cattle. This is a shrub found in almost every part of the colony, the roots being well known to the Dutch as "Davidjes"; its leaves are petiolate, blunt, entire, and glabrous.

Soon after the arrival of our mounted reinforcements in Zululand, and when they commenced to march and were compelled to graze the horses and oxen, reports became current of many deaths occurring from eating poisonous plants; and in a few months—through the kindness of Inspecting Veterinary Surgeon Gudgin and Veterinary Surgeon Glover, Royal Artillery, and the courtesy of Mr. J. Collins, Principal Veterinary Surgeon—we received a number of specimens of what were collectively named *Tulp* or *Tulip plant*, but which were in reality four different kinds. Whether they are all poisonous is doubtful, seeing that at least three receive one common designation—that of *Tulp* or *Tulip*; but as two were certified by persons who were familiar with them, and who were cognisant of their having caused the death of animals which ate them, as being the real *Tulp*, these more particularly deserve notice. The third I will merely allude

to as an *Irid*, known to botanists as *Vieusseuxia tripetaloides* (De Candolle); the root is a corm, and was gathered at Dundee by a farmer who called it *Tulp*, and stated it was poisonous. It may be so, as it belongs to the same order as another specimen sent, which has been identified as poisonous to human beings, and with every probability to animals.

One of the remaining two plants was gathered at the now celebrated Rorke's Drift, and is known to have killed a large number of Mr. Rorke's cattle some years ago. The specimen was verified by Mr. Bell, a farmer there, as the true *Tulp*. This is an *Amaryllid*, and is identified as the *Cyrtanthus breviflorus* of Harvey. It is a narcissus-like plant, and has been recently made the type of a new genus by Mr. Baker, (our best authority on "bulbous plants"), and is his *Anoiganthus breviflorus*; he describes it as follows in the *Journal of Botany* for 1878 (p. 76) :—

*Bulb* ovoid, an inch in diameter, with a short neck, and very dense tuft of slender root-fibres. *Produced leaves* generally three, contemporary with the flowers, lorate, obtuse, half to three-quarters of an inch broad, about a foot long when fully developed. *Scape* slender, terete, varying in length according to situation, from a couple of inches to a foot or a foot and a half. *Umbel* two to ten-flowered. *Bracts* one or two, lanceolate, one and a half to two inches long. *Pedicels* finally one to two inches long, erect in all stages. *Ovary* green, oblong, an eighth of an inch long; tube a quarter to three-eighths of an inch long, funnel-shaped; limb half to three-quarters of an inch long, whitish; segments equal, lanceolate, acute. Three upper *stamens* reaching half way up the limb, the three lower just out of the throat. *Anthers* pale yellow, oblong, half an inch long; *filaments* a quarter to one-third of an inch. *Style* overtopping the stamens, with three falcate stigmatose lobes thickened at the tip. *Perianth* persistent till the fruit is half formed. *Capsule* membranous, oblong, or turbinate, half to three-quarters of an inch long, each cell filled with compressed seeds. Native of Natal. At 5,000 feet, on Mount Kondewelde, of the Sneeuwbergen range, in December, 1872, it was found in leaf and flower by Bolus. It also grows in damp places on the Baziya hills, Transkeian Kaffraria, as well as in marshy plains at Beaufort, and on the damp table-land of Mount Boschberg.

No mention is made by Baker of the poisonous properties of this plant, but from the descriptions of its habitat and other characters, it would appear to be one of the toxic specimens met with during the expedition.

The remaining plant is an *Irid*, and is the *Moræa collina* of Thunberg, but is perhaps better known to botanists as *Homeria collina*. It is described in the *Botanical Gazette*, at page 1033, by the former name, and by Pappe by the latter.

Pappe mentions that it is known to almost every child in Cape Colony as the "Cape Tulip," and he introduces it into his pamphlet, not because of its therapeutical use, but because of its obnoxiousness. The poisonous qualities of its bulbs, he adds, appear to have been known to some extent years ago, but judging from the rapidity with which death ensued in a recent case, when they had been eaten by mistake, it must be of a very poisonous kind.

He gives particulars of a case of poisoning by this bulb, from which it appears that a Malay woman somewhat advanced in years, with her three grandchildren, partook of a supper consisting of coffee, fish and rice, and ate along with this a small basinful of *Homeria collina*. The exact quantity each ate was not ascertained. About one in the morning the woman awoke with severe nausea, followed by vomiting; she found the children similarly affected, and endeavoured to call for assistance, but could not, and was too weak to leave her bed; and when at five o'clock aid came, the eldest child was *moribund*, and expired almost immediately. Another child died an hour afterwards, and the other was in a state of collapse, almost insensible, with cold extremities, pulse scarcely fifty and irregular, and pupils much dilated. The symptoms of the grandmother were similar, but not so acute, and were accompanied by constant efforts at vomiting. By resorting to diffusible stimulants, she and the child eventually recovered.

The body of the eldest child was examined twelve hours after death. Marks of intense Gastritis were found, particularly about the cardiac and pyloric orifices. The inflammation extended throughout the whole course of the small intestines, and there was great venous congestion of the brain. Obstinate constipation prevailed in this case. As the roots of the plant were boiled before they were eaten, it would appear that the poison is not dissipated by boiling water.

Another instance is recorded in which a party consisting of three Hottentots, two women, and a slave, all partook of these roots—which the Dutch call "Uyntjes"—previously roasted in ashes. They all perished in great agony, except the slave, who only ate one bulb.

Nothing is said by Pappe as to its toxical action on animals. He gives the following description of the plant, which corresponds with that of the specimens sent by Gudgin and Glover:—

*Root*, a corm or tuberous bulb covered with a fibrous, reticulated, hardened coat. *Shaft* erect, smooth, paniculately branched. *Branches* 2-3 flowered. *Spathe* 2-valved, awned. *Radical-leaf* strap-shaped, narrow, caudate, concave, abruptly-pointed, outreaching the shaft. *Cauline-leaves* 2-3 much smaller. *Corolla* ephemerous, of a yellow or vermilion colour.

The evidence of the Army Veterinary Staff in Zululand, with regard to the "Tulip Plant," is particularly interesting and valuable. Mr. Gudgin and Veterinary Surgeon Longhurst, 1st Dragoon Guards, remark that it is called by the Kaffirs and Zulus "Indhlalata," and by the Dutch "Tulp" (Tulip?); that it

makes its appearance with the young grass, and is readily eaten by cattle. Longhurst, writing from Camp, Conference Hill, in August, reports that "it is very abundant at this period of the year, and quickly grows after the *old* grass has been burned, and before the *young* grass appears; so that it is easily conceived how ravenously it is sought after and eaten by the majority of herbivora." It grows in most parts of the colony, but is most abundant in the neighbourhood of streams and swampy ground ("vleys"). It has, however, been found at an elevation of 3,000 feet, according to Mr. Gudgin. When mature it is about a foot and a half high; has a delicate, buttercup-like flower of a yellow, golden yellow, or pink colour. The stalk is leek-like, root bulbous, and when pulled from the ground it emits a very rank and pungent odour. It grew so thick at Landman's Drift, that in some of the "mealie" (Indian corn) gardens, it looked as if cultivated.

The losses incurred through horses and cattle—especially when these are newly imported—eating the plant appear to be very serious. Rorke lost a large number of his oxen; and one farmer informed Mr. Gudgin that on the banks of the Umlazi river, about twenty miles from Pietermaritzburg, he lost twenty-seven horses in one day from "Tulip-poisoning." Mr. Longhurst states "that since being on this campaign, I have been called to many scores of private and attached Government horses, trek (draught) and slaughter oxen, which have been reported to me as suffering (in vulgar parlance) from 'gripes,' and upon careful inquiries I have found that these patients have been grazing near water, on 'vleys' which more or less abound in our encamping-grounds. Upon examination of my patients affected with the vegetable poison, I have always found them in extreme agony, and presenting all the characteristic symptoms of flatulent colic, being frightfully tympanitic. . . . . During this campaign I have not seen or heard of a case of 'tulip-poisoning' amongst mules, and account for it by the fact that they invariably, when out-spanned and at large, make for high ground among the rocks and mountains."

Mr. Gudgin gives the symptoms as colicky pains and giddiness; as the system comes more under the operation of the poison the enteric symptoms increase, partial paralysis of the

hind extremities ensues, and eventually the paralysis is nearly general, when death ensues. He notes that cattle bred in the districts where the plant grows are said not to be affected by it; though, it is added, this immunity is rather supposed to be due to the animal's instinct in avoiding it. In some cases the stomach is found ruptured after death, the rupture being due to the extreme distention of the intestines with gas. Death from Asphyxia may also be produced by acute tympanitis.

A very alarming instance of Tulip-poisoning is reported by Veterinary Surgeon Lambert, as taking place among the horses of the 17th Lancers at Landman's Drift, on May 25th, no fewer than thirteen cases occurring in one night. Ten of the cases happened in the left wing of the regiment, seven of which died, and three in the right wing—all of which recovered. It appears that the horses of the regiment were, by order of the Commanding Officer, taken, on the afternoon of the 25th, to entirely fresh grazing-ground. That night one horse died suddenly, and another succumbed during the night; next morning a number of horses were found lying prostrate, with head outstretched, and apparently in a state of collapse. The respiration was not much disturbed; the tongue was coated and white; visible mucous membranes injected; there was slight puffiness about the eyes, which, after a time, were retracted in their orbits; the lower lip was pendulous. In some instances much abdominal tympany was observed early, but it was present in all towards the end. Four more horses died on the 26th, and two on the night of the 27th. Obstinate constipation was usually present, but in one or two cases there was diarrhœa towards the termination. The horses (all English) were lying prone, and tranquil; but at very long intervals symptoms of colicky pain were manifested. The cases were at first treated for Colic, but after the first two *post-mortem* examinations the presence of poison was suspected. There was inflammation of the villous mucous membrane of the stomach, and in three cases rupture of that viscus—due, probably, to the tympanitis; the intestines were slightly inflamed in places, and their contents, as well as those in the stomach, were very well digested, moist, and normal in appearance. All the other parts of the body, including the lungs, were healthy.

Mr. Lambert incidentally remarks that on the afternoon of the 26th, four of their Kaffir scouts came and stated that the horses were poisoned by "Tulip grass," which no one then present appeared to recognise, or know of, and they asked permission to treat the horses then ill. They were allowed to treat six of the worst cases, four of which appeared, indeed, to be hopeless—one having its tongue hanging out of its mouth, and its lips cold and pendulous; but it ultimately recovered.

The Kaffirs collected some Tulip-plant and grass, charred them, made a kind of broth with the ashes, soot, and boiling water, stirring the whole while the water was boiling, and gave each horse about a pint and a half. Whether the remedy was efficacious or not, Mr. Lambert does not venture to say; but of the cases so treated four recovered and two died. On subsequent inquiry, Mr. Lambert learned that the poisoning and remedy are well known with regard to cattle, but that the accident is rare among colonial horses, as they refuse the Tulip grass. Mr. Gudgin corroborates the statement as to the remedy, as does also Mr. Longhurst, who remarks, "There are various antidotes used with complete success; but the base of the best is undoubtedly *carbon* administered in fluid—such as water, vinegar, or oil. The natives and colonists burn two handfuls of the 'Tulip' almost to ashes, and then throw it into a bucket of cold water and administer without delay. Soot, which is readily collected from any kraals, mixed with water, answers well, and relieves the tympany almost immediately. Burnt hay, straw, rushes, or a piece of old sacking answer equally well. Buttermilk, when it can be obtained, is also a capital antidote to Tulip-poisoning."

It is a curious fact that all the cases of poisoning from this plant in the expeditionary force, as shown by the returns sent to this country, occurred among *English horses*, none being reported among the *mules* or *colonial horses*. The resemblance of the symptoms and *post-mortem* appearances in people poisoned by *Homeria collina*, to those observed in the horses, must also be noted. In conclusion it may be added that during the first week of October, ninety-nine army oxen, and in September thirty Zulu cattle died from the effects of "Tulip."

With regard to Afghanistan, it appears that when the Kurum Valley was occupied by our Field Force in the autumn of 1878, one battery of artillery alone lost thirteen horses from eating poisonous grasses. Other cases occurred in 1879, particularly in the vicinity of the Peiwar Khotal, and at Thull. The grass is described by one observer, whose pony was affected by it, as "a coarse, bright-green, large-bladed grass that grows about in the hills." He had previously been shown a different wiry, olive-green coloured grass, said to be poisonous. The first symptoms noticed by this correspondent, were stiffness of the hind-legs of his pony, prostration, and dulness; laboured breathing, profuse perspiration; head depressed, eyes closed, spasmodic twitching of the lips, surface of body cold, pulse imperceptible, nausea, saliva green and flowing from the mouth, as well as a green discharge from the nostrils.

These progressive symptoms were followed by manifestations of abdominal pain. The tongue became much swollen, and protruded from the mouth. On the sixth day the end of the organ sloughed off. By giving stimulants, applying hot fomentations to the abdomen, and careful nursing this case recovered.

Dr. Aitchison, the botanist with the Kurum Field Force, was present at Thull when the Royal Artillery and other horses were poisoned. In a letter of his, which is now before me, he states that the symptoms were exactly those which would be produced by an excessive accumulation of gas in the intestines, from mechanical injury or some kind of food—the gas forming so quickly and abundantly as to interfere with the action of the heart and lungs, and lead to Asphyxia or rupture of the stomach or intestines.

Mr. F. F. Collins, Principal Veterinary Surgeon in Bengal, to whom I am indebted for the foregoing information, sent me a sample of grass from the Kurum Valley, where it appears to grow rather plentifully. Mr. Webb, Curator of the Edinburgh University Herbarium, who has most courteously rendered me great service in determining this and the Zululand plants, as well as afforded me valuable information, for which I thank him most heartily, pronounces the grass to be *Stipa Siberica* (the *Avena Siberica*

of Linnæus).* But Dr. Aitchison, who examined the grass in a comparatively fresh state, claims it to be a species of *Stipa* allied to *S. Siberica*, and states that he recognized its poisonous properties in Kashmir ; that horses and cattle of the country know it and will not touch it ; though those new to the country eat it with avidity, become drunk, and die comatose. The Kashmir plant grows under trees, and was in profusion at the Peiwar Khotal, and in the vicinity of villages in that locality. The natives call it Khékhá, and all know its poisonous properties. The remedy of the Afghans, as well as the Kashmiris and Central Asians, is acids—unripe fruit, for instance. Dr. Aitchison's remedy was holding the horse's head over a dense smoke until the animal perspired freely and a discharge flowed from the nostrils. He had treated very many horses in this manner in Gulmuz and all round about the Scinde Valley.† The plant does not grow in the open.

During winter, it appears the 8th Regiment collected it, as well as any other grass they could obtain ; but it did no harm to the horses and ponies which ate it—possibly because it had lost its narcotic properties, as it dries and withers under the influence of the cold. In this respect the grass does not differ from many other poisonous plants, which are most dangerous during growth or the flowering period.

That some grasses have the power of producing a kind of

* As is known, Stipa is a genus of monocotyledonous plants belonging to the natural order Gramineæ—the species being grasses which grow in the temperate parts of the globe, and are very numerous. Linnæus, in his famous work, describes the *Stipa Siberica* as follows :—"*Avena paniculato, calycibus unifloris, seminibus hirsutis, aristis calyce triplo longioribus. Festuca glumis villosis, aristis calyce triplo longioribus.*"

† Dr. Aitchison, in a letter written in 1875, from Gulmuz, Kashmir, says : —"I have just been collecting some good specimens of a grass that is extremely common near Gulmuz. It grows in large tussocks, and is very poisonous to horses and cattle. The cattle are too knowing, and will not eat it. Horses from the plain do eat it, and die from its effects, but if quickly treated recover. They become comatose, and lose the power of their limbs. It grows in the Scinde Valley also. Whilst there, I heard of it and the cure, viz., smoking them, by making a large fire and keeping the horse's head in the smoke. The nose commences to run first, and if it does so freely, the beast is safe. The natives also say, if a cow eats it they give unripe apricots, or any acid vinegar, which aids the recovery. A large number of the horses this year at Gulmuz were poisoned by it : none died, as all smoked their horses."—*Journal of Botany*, vol. xv., p. 267.

stupor or intoxication in animals which consume them, there is ample evidence to show. I have mentioned the "Dronk grass" of the South African Boer, and Aitchison refers to the Indian *Stipa* met with in Kashmir and Afghanistan. In some American States there is a pale grass said to be capable of producing considerable excitement among horses, cattle and sheep which are fed on it; and a few years ago I published a paper in the *British and Foreign Medico-Chirurgical Review* on the intoxicating, or rather toxic action of our own *Lolium temulentum* (the "cockle" or "darnel" of agriculturists) when it is eaten by animals.

But perhaps of more importance and interest to us at present, is the fact that the *Stipa* mentioned by Aitchison grows profusely in Afghanistan, and indeed throughout a large extent, if not the whole of Central Asia; and this circumstance should put Army Veterinary Surgeons who may serve there on their guard, so as to prevent ill consequences.

It does not appear to have been known to Aitchison, that what appears to be this species of *Stipa* has been found in the interior of Mongolia, among the Ala Shan mountains. In *Trimen's Journal of Botany* (*new series*, vol. v., p. 210), Mr. Hance mentions having received from Dr. Bretschneider, physician to the Russian Legation at Peking, specimens of a grass which had been forwarded to the Count de Rochechouart, the French Minister at that capital, by a Roman Catholic missionary, accompanied by a note, of which I make the following translation:—"I send herewith a small parcel of a plant which the Chinese call *Tsoui tsao*—the intoxicating plant; the Mongols call it the poisonous plant (*herbe vénéneuse*). It is found in abundance on the Ala Shan mountains, where we were travelling; and our horses having probably eaten abundantly of the plant during the night, were so intoxicated that they could scarcely stand next morning. A Mongol family encamped near us advised us to give vinegar as an antidote; but as we had none we gave sour milk. They also told us that a sovereign remedy was a decoction of goat's head. This we gave to our horses, and they soon recovered. The droves of horses, cattle, sheep, and camels which graze on these mountains do not suffer,

either because they do not eat this grass, or they have become accustomed to the poison."

Hance observes that this grass belongs to an undescribed species of *Stipa*, only eleven species of which have been hitherto recorded as natives of the mountain plateaux or steppes of Central and North-eastern Asia. Six of these, he states, have plumose awns; of the remaining five, all but *Stipa Siberica* differ from the missionary's specimen in having the apices of the anther-cells glabrous or inappendiculate. This character, slight as it may appear, is, he believes, absolutely constant and invariable in each species. From *Stipa Siberica* the Mongolian grass is perfectly distinct by its inflorescence, smaller flowers, and other features. Hance designates it *Stipa inebrians*, and fully describes its botanical characters.*

The Russian traveller, Colonel Prejevalsky, in his "Mongolia, the Tangut Country, and Northern Thibet" (vol. ii., p. 81), alludes to this Ala Shan poisonous grass as a species of *Lolium*, and he mentions that the native horses and cattle carefully avoid eating it.

The most effectual remedy, simple and accessible, in the kind of poisoning we have been noticing—as, indeed, in several other kinds of poisoning—is undoubtedly charcoal, in the form of soot or burnt wood, and mixed with water for convenience in administration. But an important observation I may here be permitted to make. In the extreme or persistent tympanitis which often accompanies vegetable poisoning in herbivorous animals, grave damage may ensue from rupture of the stomach or intestines, owing to their great distention; or the diaphragm may

* The following is Hance's description, by which this dangerous grass may be recognised. STIPA INEBRIANS *sp. nov.* Rhizomate . . Culmis erectis cum vaginis nodisque lævibus, foliis linearibus acuminatis involutis scabris 8 poll. et ultra longis 2-3 lin. latis, ligula lineali truncata, paniculæ linearis coarctatæ angustæ 5-7 poll. longæ pallide viridis lucidæ radiis 2-3 mæqualibus 1-2 poll. longis adpressis a basi v. paulo supra ramosis et floriferis, pedicellis 1-2 lin. longis, glumis subæqualibus lanceolatis apice lacero-dentatis hyalinis nervis 3 viridibus abbreviatis, glumellis adpresse albo-villosis involutis superiore lineari herbacea paulo breviore uninervi inferiore lanceolata subcoriacea 1½ lin. longa trinervi fructifera atrofusca ex apice integro dense barbato aristam articulatam sed persistentum scabram sub anthesi rectiusculam postea distincte tortam et geniculatam 5 lin. longam exserente, antheris linearibus breviter barbatis.

become lacerated, or Asphyxia lead to rapid death, from the diminution of the cavity of the chest. In such circumstances relief must be afforded at once; and this, happily, can be achieved by the simple and safe surgical operation of puncturing the large intestine by means of a small-sized trocar and cannula, such as that made specially for this purpose by Messrs. Arnold and Sons, surgical instrument makers, West Smithfield. When the abdomen is enormously distended with gas, the danger of speedy death is imminent; but, fortunately, this distention facilitates the operation; so that it is scarcely possible to miss penetrating the colon.

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## "LOUPING ILL" IN SHEEP IN UPPER TEVIOTDALE.

BY W. ROBERTSON, F.R.C.V.S., KELSO.

HAVING for a considerable time paid more than a passing attention to that disease of stock popularly known by the term "Louping Ill," I am now at the present time—pending further investigation and experiments—desirous of placing on record certain ascertained facts in connection with the disease; as also of stating what may at least be called an opinion or hypothesis as to its nature and origin—although at present I am inclined to regard this as something more than a mere opinion—deduced from these facts.

After a faithful and exhaustive examination of the grasses composing the pastures on several farms in Upper Teviotdale, where the disease is prevalent, and comparing these with what exists on lands in the Cheviot range, where the disease is unknown, it is certain that the grasses in both situations are similar, but that in the former at a particular period of the year they are extensively *ergotised.*

The extent of this diseased or ergotised condition of the grasses seems to bear a direct relation to the amount and virulence of Louping Ill in these several farms.

Into the life-history of the fungus, "*Clanceps purpurea,*" of which this ergot is the intermediate or *selerotium* stage, I need not now or here enter, except to say that a knowledge of this life-history gives to my mind a wonderfully clear explanation of

many phenomena exhibited in the history and development of Louping Ill.

The toxic and physiological actions of ergot on mammals, although capable of bearing somewhat different interpretations, are still sufficiently well understood to enable us to say that they appear to be developed in connection with a peculiar action on the cerebro-spinal nerve-centres, chiefly the latter—that their leading features or manifestations are paralytic or convulsive.

Placing these phenomena together, the known and recognised manifestations of the toxic action of ergot and the ordinary train of symptoms shown in cases of Louping Ill, it seems to me that the view which I suggest in regarding this disease as truly *Spasmodic or Convulsive Ergotism*, is capable of giving a fuller and more rational explanation of the diverse phenomena which characterise this disease, than any else with which I am at present acquainted.

It is intended that the question shall be followed out in this particular direction by a further examination of the grasses of other districts, both where the disease is known to exist and where it is absent ; together with careful after-death examination of cases in the early stages of disease, with a view to detect either ergot or conidia, and by properly conducted feeding experiments—feeding, I mean, with the ergot obtained from the grasses.

I obtained my first specimens of the ergotised grasses from Mr. A. Brotherstone, of this town, who this season, at the request of the Hawick Farmers' Club, made an exhaustive botanical examination of the pastures of several farms in Upper Teviotdale. I will not trouble you further at this time, but rest satisfied that I have recorded these few facts relating to Louping Ill, together with my hypothesis of the cause or origin of the affection drawn from these facts.

You will most probably hear from me regarding this matter at another time.

## SURGICAL AND PATHOLOGICAL NOTES.

BY J. WOODROFFE HILL, F.R.C.V.S., WOLVERHAMPTON.

*Gastric Irritation, due to the presence of a Hair Ball (Dog).*

ON the 2nd of July, 1878, a Blenheim spaniel, belonging to the Rev. Geo. Witherby, was brought to me for inspection. The servant could give me no particulars, beyond being told to bring it to me, as it was poorly. I found the animal suffering from what appeared to be Colic, but the pain was comparatively slight, as the symptoms only manifested themselves in a small degree now and then. I sent some chlorodyne mixture, and heard no more until the 4th, when I received the animal, dead, for examination. It appeared that the patient, having apparently recovered, was taken for a walk by his master, when he was seized with a fit and died. On opening the stomach, I found it contained a consolidated mass of human hair (combings), about the size of a bantam's egg. This fully accounted for the symptoms of stomach irritation and indigestion. The mass had evidently been there some time, as its firmness, shape, and coat of mucus testified, and it had probably been swallowed at different times.

*Complete Rupture of the Jugular Vein (Cow).*

On the 29th of August last, I visited a cow at Bloxwich, belonging to J. Bealey, Esq. She had caught the jugular vein on a gate-hook, severing the vessel. There was a large irregular wound at the inferior portion of the neck, on the right side, near to the thorax; hanging out of the orifice was some five or six inches of the lower end of the jugular vein, which, being plugged with a coagulum, presented much the same appearance as a piece of india-rubber gas-tubing. The superior portion, which was not visible but could easily be felt, was also plugged. A considerable amount of blood had been lost, the hæmorrhage being chiefly interstitial, and in the brisket, which had a heavy, dropsical appearance. A butcher was already there awaiting my verdict, Mr. Bealey fearing that bleeding might recommence, and death result. But from the plugged condition of the severed ends of the jugular I did not apprehend secondary hæmorrhage, and as there was only the necessity of administering restoratives

after such excessive depletion, with the removal of the accumulated blood in the brisket and judicious treatment of the wound, I very confidently undertook the management of the case. Of course, the function of the jugular on that side was destroyed, as it is when obliterated in other animals ; but this in cattle is of little moment, particularly in feeding-stock.

I replaced the portion of the vessel hanging out, within the wound, ordered diffusible stimulants, and hot fomentations to the brisket. In a few days the wound smelt very offensive, from the breaking up of blood-clots. A stimulating liniment, with carbolic acid, was injected, which remedied this, and promoted a healthy discharge. The animal was quite well in a fortnight.

*Cancer (Bitch).*

On the 31st of September last, I visited, with Mr. F. Manby, F.R.C.S., the deerhound bitch "Teilda," belonging to James Forsythe, Esq., for the purpose of examining an enlargement of one of the posterior mammary glands, and which I pronounced to be cancer. The external appearance was glazed, tense, and of a varied livid hue. In several places it was puckered, and the nipple retracted. There were three fistulous wounds, from which a thin offensive discharge escaped.

I advised the removal of the tumour, and received her into the infirmary on the following day. She was duly prepared for the operation, which I performed on the 22nd of October, Mr. Elam, of Liverpool, being present, very kindly assisting me. Placing her under the influence of chloroform, an incision being made lengthwise to the left of the nipple, the substance was successfully dissected out, but it was of such a vascular nature that in those parts where there was no intervening areolar tissue the bleeding proved somewhat troublesome to us, hæmorrhage following every cut of the knife. Before final removal, the large vessels were embraced in one general ligature.

A smaller mass, the size of a filbert, mallet-shaped, and completely osseous, was found unattached underneath the cancer proper. The tumour involving the mammary gland, which it had almost obliterated, weighed a trifle over half-a-pound. On

making a section of it, the scirrhus type of cancer in both stages, *hard* and *soft*, was found to be well marked—the former in the centre, the latter towards its circumference.

A little tow, steeped in tinct. ferri, being placed in the cavity, the skin-wound was brought together by interrupted silk sutures. On the third day the tow was removed, and warm water bathings commenced. Appetite and spirits good and all the functions naturally performed.

The case continued to do well until the 1st of November when the patient refused her food, and on that day she had no movement of the bowels. An enema was given, and a dose of castor oil administered, but without the desired result. The following day she was in the same condition, and notwithstanding the repeated employment of enemas, sometimes with castor oil, and the administration of castor oil (in all six ounces), together with the absence of food beyond the forcible exhibition of a little milk, it was ten days before any evacuation of fæces took place, and then they were scarcely soft. During this period of constipation, although the wound was looking healthy and had nearly healed, symptoms of Peritonitis were manifested; the abdomen became tense and the skin covering it burning hot. On the seventh day, the slightest abdominal pressure with the fingers made the poor creature shrink with pain. These symptoms rapidly increased; she lay on her side, and her howls and short barks of pain were piteous in the extreme. Hot fomentations to the abdomen afforded great relief—indeed, such was her appreciation of the comfort it gave, that she would place herself in position for the cloths and lie perfectly quiet, with an expression of gratitude on her face the whole time. Chlorodyne was the only medicinal agent (excepting the castor oil) I administered, and milk the only diet. The acute symptoms subsided on the tenth day; on the twelfth she took a little biscuit voluntarily. From this time she gradually improved; a nutritious diet, with a daily allowance of port wine, sometimes varied with brandy and milk, materially hastening convalescence, and on the 22nd of November she went home in perfect health and spirits.

Early professional advice in cases of this description would spare animals much suffering, and materially simplify the treat-

ment. It has been my lot to operate frequently for disease of the mammary glands, which appears to predominate in greyhounds and spaniels; and though successful in each instance, I have been pained on many occasions—when large masses of diseased tissue have had to be removed—with thoughts of the prolonged suffering inflicted, by the owner not having sought remedial measures earlier.

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## INOCULATION FOR CONTAGIOUS PLEURO-PNEUMONIA.

BY JAMES MOORE, M.R.C.V.S., LONDON.

I HAVE read with great interest the leading article on this subject in the December number of the VETERINARY JOURNAL, confirming as it does, views which I was compelled to adopt after witnessing the beneficial effects of inoculation as a preventive of Contagious Pleuro-pneumonia in cattle.

It is certainly surprising that any one can "close his mind" to the protection afforded by inoculation, after the facts which have been adduced; but that such is the case is, unfortunately, only too well known.

Five years ago, as a member of the Sanitary Committee of the Vestry, I visited nearly all the cowsheds in the parish of St. Marylebone, and took the opportunity of inquiring as to inoculation. I found that it had been practised for many years, and the proprietors, without exception, assured me they could not carry on business without it. Recently a dairyman and cattle salesman, in a large way of business, told me he had practised inoculation for twenty-five years, and that the "trade" in London, with few exceptions, did so. These exceptions are men owning fifteen or twenty cows, who do not inoculate, *as a rule*, because it diminishes the secretion of milk for a time; but in case of an outbreak of the disease, they immediately inoculate the unaffected beasts. From this I fancy inoculation has been practised to a greater extent, and for a longer time, than many people suppose.

Two years ago, I saw about twenty Members of Parliament and several members of the Government on this subject, and was

rather surprised to find that many of them had never *even heard* of inoculation. However, at my suggestion, Sir Patrick O'Brien, M.P., inquired in the House of Commons whether the Government were disposed to introduce a bill making inoculation compulsory. He received a negative answer, on the ground that the Government veterinary advisers reported that sufficient evidence had not been furnished to show its efficacy or utility. I do not know who the Government veterinary advisers are, but it is quite clear they either know very little about the subject, or "pre-conceived ideas" have left no room for the reception of fresh knowledge.

Professor Brown, in a report published in the Journal of the Royal Agricultural Society for 1874, gives some interesting particulars of experiments conducted at the Royal Veterinary College, apparently with the view of inducing Pleuro-pneumonia by inoculation. That no lung-lesions are induced by it, I believe is freely admitted; although I have frequently noticed a short cough after the operation, but whether the result of it or not I cannot say. The report savours strongly of unbelief in inoculation as a means of checking this disease, and instances are given to prove its inertness; but they are not reliable, there being every reason to suppose that the animals were affected with the disease before and at the time of the operation.

The bad repute attaching to inoculation is altogether due to the improper ways in which the operation is so frequently performed. We cannot expect good results if the animal be suffering from disease of any kind, or by introducing the virus into a more important part of the body than the tail, or by inserting a piece of diseased lung under the skin, a mode common among stock-owners who inoculate without professional assistance.

My mode of proceeding is, to select a piece of diseased lung, free from any of the black discoloration, and filter the exudation through blotting-paper, into a half-ounce phial. I then clip the hair off the tail for two inches, and make an incision lengthways, of about three quarters of an inch, with an ordinary scalpel; then, with the tip of the finger, I rub a little of the fluid into the cut. This plan, I think, prevents swelling of the tail, in a great measure, as I seldom find more than a circumscribed enlargement of about

three inches, and have only to amputate about four per cent. Moreover, I think the cut must obviate pain when the tail first swells.

Most of, if not all, the experiments which have been undertaken with Contagious Pleuro-pneumonia, have been with a view of *producing* the disease; and a dogma has been promulgated to the effect that it can only spread by an animal inhaling the breath of an infected beast. It has even been said that "further investigation in this direction seems quite unnecessary." I, for one, cannot accept this dogma, and it should be received with great caution. I have known cases occur in different parts of a shed where this condition could not possibly occur. And not long ago, an instance came under my notice which I think worth relating. I was called to see a cow at a farm six miles from London, and astonished the owner by telling him what was wrong. He assured me he had not bought any fresh stock for over three years, neither had he heard of any cases of Pleuro-pneumonia in his neighbourhood for years. It seems, however, that a bull had been standing next to the cow, and that a carcase butcher, who did a large business about the district, came to buy the bull, and passed between him and the cow which subsequently became affected. Later on three more cows which stood near her became affected also; the remainder—about twenty-five—were then inoculated, and no more suffered.

No doubt the last three became affected through inhaling the breath of the first one, which is clearly the most favourable condition; but how did the first one take it, unless from the butcher's carrying the contagion?

In the report referred to, Professor Brown gives two methods for experimental inoculation; but as he says that legal and pecuniary difficulties lie in the way of conducting these investigations, I may relate a case bearing on the point.

In October of last year I examined a number of cows belonging to a dairy-farmer, near London. I found five affected with Pleuro-pneumonia, and the next day I inoculated the remainder —sixty-six altogether. About four months afterwards, the owner brought fifteen beasts from another farm belonging to him in the country, where the disease had never existed, and soon after their arrival they became affected. Not long after

that, he purchased a number of Irish cattle; these likewise became affected, and like the others, were dealt with according to the Act. During this time none of the inoculated cows became diseased, although they were allowed to mingle with the others; and up to two months ago, when I last saw the owner, they remained healthy, and no other conclusion can be arrived at than that the inoculation afforded the desired immunity.

I am reminded of an outbreak of Contagious Pleuro-pneumonia which occurred at Campbeltown, Argyleshire, in 1871, through the introduction of a prize beast from Edinburgh, and which was completely arrested by inoculation after the slaughtering process had entirely failed. I understand about 1,800 beasts were inoculated on this occasion.

I think inoculation may fairly be considered outside the field of experiment, after the tangible proofs which are recorded of its beneficial effects, and I am sure there are many members of our profession able to adduce instances of its utility, which, after all, are quite, if not more reliable than experimental investigations. And if the profession took the matter up—instead of leaving it for the doctors—say, by appointing committees of the medical societies to collect evidence, I think we could lay some information before the Government which they could not well ignore.

Can we imagine that the London cowkeepers—shrewd business men—would continue inoculating if they found no good results from it?

The Duke of Richmond and Gordon, in a recent speech, congratulates himself on the benefits conferred by the existing Contagious Diseases (Animals) Act, and instances the present diminution of Pleuro-pneumonia in this country; but he overlooks the fact that similar cessations have occurred before, followed by outbreaks of renewed energy. Besides, many cases are never reported, the victims dreading a loss of business consequent on publicity.

The existing system of slaughtering is a most costly one; its working expenses are great; and it inflicts a loss on the individual stockowner, besides casting a heavy burden on the ratepayers. Although it has had a fair trial, it has not yet "stamped

out" the disease, and never will. In fact, the remedy is as bad, if not worse than the malady.

I am fully persuaded that if inoculation, by properly qualified veterinary surgeons, of all bovines from four to six months of age, was rendered compulsory, we should soon hear the last of Pleuro-pneumonia.

I hope the editor of the VETERINARY JOURNAL will not lose sight of this matter; it is a great question, the solution of which will tend to enhance our profession, and show the utility of veterinary science to the general welfare.

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## GUNSHOT WOUNDS.—"THE VAGARIES OF A SNIDER BULLET."

BY J. C. DWYER, M.R.C.S., M.R.C.V.S., ROYAL HORSE ARTILLERY, WOOLWICH.

IT is not often that the veterinarian is called upon to deal with wounds resulting from guns and rifles. As a rule, our patients are not liable to injuries of this nature, unless indeed man has determined to take life, when the subjects of his humanity surrender themselves into his hands with so much misplaced confidence in his good nature that the result is seldom uncertain.

The surgical case recorded here resulted from one of those silly freaks with firearms which have, from time to time, cost many good lives. The victim in this instance happened to be a fine Newfoundland dog, the property of Lieutenant C——, R.N., and at the time of the accident was on board one of Her Majesty's ships, cruising off Vatè, in the South Sea Islands. The animal had always shown a great dread of musketry fire; so much so, that the sailors were in the habit of amusing themselves by presenting their empty rifles for the purpose of frightening him. On one of these occasions a blue-jacket took a carbine from the rack, and never suspecting it to be loaded, fired point blank at the dog then standing facing him. The carbine happened to contain a service round of ammunition, and the bullet struck the dog's head, entering the right side of the face, lacerating the muscles of the cheek, and making its escape at the angle of the jaw.

Taking a backward and downward direction, it re-entered the body at the breast, near the point of the right shoulder, and all attempts to trace its course from this spot failed. The animal lost a quantity of blood, and was thought to be mortally wounded. Contrary, however, to expectation, he exhibited no signs of internal injury, and under the care and attention of the ship's surgeon, the wounds healed rapidly, and the case did well.

In the meantime, the question as to what had become of the bullet afforded a subject for speculation amongst the crew. Travelling at a very high velocity, and with a force of impact equal to penetrating four inches of elm planking, it seemed incredible that it could have been arrested in its flight by the soft and superficial structures. Yet there remained direct evidence that the internal organs had so far escaped injury. This point was not cleared up, in spite of numerous and careful examinations, extending over seven or eight months, during which time the animal seemed to be in its usual health. The owner returned to England in the autumn, and he and the dog began to take long walks together. It then began to be noticed that the dog was gradually becoming lame on the left fore limb. In this condition the patient came for examination, and an abscess was found occupying the space between the scapula and ribs. It was only natural, in the absence of other causes, that this abscess was thought to be connected in some way with the gunshot injury; and such proved to be the case—for on introducing a probe, after the pus had escaped, the bullet was found, after a somewhat protracted search, firmly embedded at the upper part of the cavity, entangled in the connective tissue at the base of the scapula. These adhesions having been broken down, it was extracted without difficulty, and in a few days every trace of lameness had disappeared.

It is quite clear in this instance that the bullet had passed completely round the chest, from right to left, being bound down by the skin in the first part of its track, and coursed upwards, till it finally buried itself in the connective tissue between the scapula and ribs. In its passage it had lost all shape, being as much battered as if it had struck a target. Such wanderings were common enough in the days of "brown Bess," but were

thought to have ended when the rifle came into use. It is therefore satisfactory to find that, under certain conditions, the living body may offer successful resistance to the ingress of foreign substances bent on errands of destruction, even when propelled from weapons which men have taken centuries of time and millions of treasure in bringing to perfection.

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## AN OUTBREAK OF ANTHRAX FEVER.

BY W. SHIPLEY, M.R.C.V.S., GREAT YARMOUTH.

I HAVE at length found time to give a brief outline of some cases of Anthrax, as they occurred in my practice in 1878. I think them somewhat interesting, more especially as showing the susceptibility of animals of various species to become affected through being exposed to the diseased blood of other animals, and thus proving the contagiousness of the malady; also the necessity there is for the greatest care being exercised to prevent the spreading of these diseases; and, lastly, the great difficulty there is in accounting for outbreaks. I have not attempted to write a scientific paper on this subject, but simply to state the bare facts, which you are at liberty to do what you please with.

The animals among which the disease first made its appearance were some good Irish and shorthorn cattle, that had been tied up in a good shed, which has been used for the purpose for many years; it was well drained and ventilated. The cattle were fed on turnips, some of which were then on the land, other turnips were "haled" up and covered with sand, but they were perfectly sweet and clean. The hay was as good as could be had, and they had a fair supply of linseed-cake of the best quality. They had no water—the roots being fairly full of moisture, they required none. I carefully sought for the cause of the outbreak, but, as I think is generally the case, I failed in detecting the slightest thing that I could imagine would give rise to it. I however changed the diet to simply hay and water, and had the cattle carefully watched, after satisfying myself as to the exact nature of the disease, and, as the sequel will show, with apparently good results.

On March 15th a client of mine requested me to examine the carcase of a beast which, the day previous, had been found to all appearances dying, and which was supposed to have received some injury, and was immediately slaughtered; the butcher and himself not feeling satisfied as to the advisability of sending it to market for human food, my opinion was sought. I found it to be a well-fatted ox, quite fit for slaughter; it had been tied up in a good shed with several others for some months, and was not observed to have ailed anything until just prior to slaughter. The exact symptoms shown I was unable to learn. I observed numerous tarry-looking spots (ecchymoses) under the peritoneal lining of the abdomen, more especially near the region of the kidneys, and also under the *Pleura costalis*, and particularly so on that covering the borders of the ribs and the intercostal muscles. The meat was dark in colour, but the carcase was dry and showed no signs of putrefaction setting in—in fact, *rigor mortis* was well marked. The liver was dark and congested, and its structure friable and easily broken down; the spleen was rather larger than natural, and contained tarry-looking blood; the mucous lining of the intestines was more or less congested throughout the whole extent of the canal, and showed slight signs of inflammatory action in places. On examining the heart I found petechial spots about the endocardium.

From these appearances I formed the opinion that the animal had undoubtedly been the subject of Anthrax,—or Splenic Apoplexy, as, I think, it is wrongly called. I ordered the carcase to be destroyed, as being dangerous and unfit for food. On the 16th inst. another beast in the same shed was observed to be unwell; it was exhibiting rigors, was off its feed, and was very dull. The owner, without consulting me, at once sent him to the slaughter-house, a distance of three miles, where he arrived alive and was then slaughtered. On the 17th I examined the carcase, and could detect only slight evidences of the existence of disease, but still sufficient to convince me that the animal was the subject of this malady, and had it not been slaughtered, there is no doubt it would have succumbed. The only abnormal appearance was the enlarged spleen, dark coloured, and containing the tarry-looking blood, and the bowels tinged red; nothing

could be seen amiss with the carcase. I then paid a visit to the other cattle and thoroughly examined them. On taking the temperature of all, I detected one beast decidedly unwell. I ascertained it had not fed as usual, it looked dull, there was twitching (involuntary) of the muscles of the mouth and face, and the thermometer registered 107°. Being a good fat ox I deemed it advisable, under all the circumstances, to have him slaughtered; this was done at once.

My attention was now drawn to several pigs in the yard—more than twenty sows, and younger pigs of from three months to perhaps three years old. They were nearly all, without exception, off their feed, and were standing or lying together; many of them being the subject of severe rigors, ears and tails hanging pendulous, slight swelling about the parotid glands and throats; some had purple-looking patches about the ears and back of the head and sides of the neck.

On making inquiry I found that the manure and straw containing the blood of the first beast that was slaughtered, had been thrown into the yard, to which the pigs had access, and which they were known to have partaken of, clearly proving to me the cause and nature of the attack. I thereupon gave a very unfavourable opinion as to the result, so far as the life of many of these pigs was concerned. On the following day, March 18th, I visited the slaughter-house to see the carcase of the animal that had been sent by me for slaughter on the day previous, but failed in detecting any evidence of disease in it, except an enlarged spleen. I have no doubt that, had the animal not been slaughtered, it would have succumbed; the high temperature and everything pointed to that result. The butcher was unwise enough to give some of his own pigs some of the blood of the beast killed on the 16th, and now requested me to see them. I found them huddled together in the yard, shivering and looking most miserable; they had entirely lost their appetite and looked —although in good condition—very thin. I could see no discolouration of the skin or swelling about the glands. I may here note that this state of things proved to me that the animal of whose blood they partook undoubtedly had Anthrax in an early stage of development. The pigs after a few days recovered,

and went on grazing as well as before. When I arrived at my client's, the true nature of the malady was still more evident; for in the yard I found a valuable colt lying dead. The throat was enormously swollen about the parotid glands and nearly half-way down the neck. It was only observed to be unwell a short time before death. I found the animal had access to the yard where the blood had been deposited, and was known to have been there, and no doubt it had become inoculated with the virus. I ordered the colt to be buried intact in lime immediately. The remainder of the cattle were apparently healthy and showed no increase in temperature; no others had been observed amiss. The pigs were all worse; there was more swelling about the glands, and several had purple patches more developed. Two or three were evidently dying, and some had already died and were buried in lime. When the first beast, whose carcase I condemned as unfit for human food, was cut up (despite the caution I had given respecting the disposal of the meat) some had been brought home for the dogs. All these partook more or less of it and all were more or less ill. I found one—a strong kind of water spaniel—particularly unwell, with symptoms of extreme lassitude, very quick pulse and disturbed breathing, rigors, and visible mucous membranes very injected. It was lying about, and evidently suffering from the effects of the poisonous meat (for I can only call it so). The same symptoms were manifested by the other dogs, but to a less extent. A change of diet, small doses of laxative medicine, and stimulants soon put them all right again. The recovery of the pigs was not so rapid, although the fatality among them was not so great as I had prognosticated. They lingered on for some days, and several died; the others recovered slowly, the skin about the ears and neck sloughing in places. I much regret having been unable at the time to make more autopsies of these cases; but having on one occasion had reason to attribute a rather severe illness to making a *post-mortem* examination of a beast that had died from Splenic Apoplexy, I thought discretion the better part of valour, and desisted.

I treated the cattle with a gentle saline purgative, and gave some hyposulphite of soda. The yards and sheds were thoroughly

disinfected with chloride of lime. The animals also had a thorough change of diet, and no further cases occurred.

I may draw attention to the fact that the man who was in attendance on the cattle almost night and day during the outbreak, suffered from symptoms of blood-poisoning, the medical man in attendance giving it as his decided opinion he was suffering from the effects of the contagion. He was seriously unwell for several days, but eventually recovered.

I attribute the comparatively slight loss sustained in this outbreak to the promptitude in slaughtering the affected animals, and the free use of disinfectants ; and I think the results go to prove that the longer an animal is affected the more contagious does the disease become, the poisonous properties of the blood increasing in virulency. I shall be glad to see a few remarks on this fatal malady from the able pen of the editor of the VETERINARY JOURNAL. I was particularly struck with the similarity in many of the symptoms in the sick pigs, to those affected with the peculiar and fatal "Swine Plague," as it is termed; the purple patches, the rigors, and the general appearance of the pigs would lead one almost to say at first sight that they were identical—in fact, I myself incline to the opinion that such is really and truly the case, although in an animal affected by *direct contact* with the *blood* of one of another kind the disease shows itself in a somewhat different manner—so far as the symptoms are concerned—from those animals that have taken the disease by contagion (as the term is commonly accepted) from one of their own kind ; still, the general characters are so marked that I think we must consider "Swine Plague" as one of the anthracoid diseases.

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## EXTRAORDINARY CASE OF MELANOSIS.

BY A. BURNEY WREN, M.R.C.V.S., STIMBRIDGE, WORCESTERSHIRE.

I WAS called to examine a grey mare, ten years old, which had been in possession of the owner since she was five, and had always given him the greatest satisfaction as regards her working capabilities. The symptoms presented when I saw her upon the 31st of October, were those of great pain across the loins, and

constant twitching upwards of the hind limbs. I carefully examined her, and came to the conclusion that she was suffering from some deep-seated injury, and prescribed accordingly the ordinary mode of treatment, viz., dose of physic, fomentations and counter-irritants to loins and hind limbs.

I also found that around the anus, vagina, and mammary glands were several melanotic tumours, which her owner stated had been there for some considerable time. She gradually sank in spite of all attempts to alleviate her apparent sufferings, her pulsations from day to day became more irregular, and I advised the owner to have her destroyed. This advice, however, he did not act upon, but kept her alive until December 2nd, when she fell completely prostrate in the stall. She was then killed, and an autopsy was made which disclosed the following facts :—

The whole of the muscular tissues were invaded by small melanotic tumours, also the large and small intestines, the uterus and peritoneum. The liver was much atrophied, but the spleen was hypertrophied to an enormous extent, full of the black pigmentary material, and weighed twenty-six pounds. From the posterior aorta tumours were removed as large as a walnut.

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# Editorial.

## TRICHINIASIS OR TRICHINOSIS IN ENGLAND.

How many deaths among people in this country have been due to the disturbance set up by the muscle-worm, derived from eating infested swine's flesh, will never be known, but there is great reason to fear that they must have been somewhat numerous. From the large number who habitually consume this flesh, the fact that they belong to the poorer classes, who cannot procure that of the best and therefore safest quality, and are least attentive to its being thoroughly cooked; and that the symptoms of Trichinosis are apt to be confounded with those of other diseases—notably Rheumatic and Typhoid Fever—it is evident that, given a quantity of worm-infested flesh offered for consumption, the risk of human infection is great, and its detection a matter of mere chance. To what extent the disease may prevail among people we know not, neither have we any means of ascertaining whether and to what degree swine in this country have these unpleasant entozoa in their flesh. There is no evidence that they have ever been looked for in the tissues of our native pigs—indeed, with that supreme indifference for the public health which characterises our unpaternal Government, no

inquiry has been instituted in this direction, neither has the flesh of imported live or dead pigs been scrutinised in order to find out how much of it is dangerous as food.

That our native pigs harbour trichinæ, there is every cause for believing; and that human beings in this country have died—if not from Trichinosis, at least with these pests in myriads in their bodies, is not to be denied. The worm was first accidentally discovered in the muscles of the body of a man which was being dissected in a dissecting-room in London, nearly fifty years ago; and since that time it has been found in dissecting-room subjects at various times, in these kingdoms—though whether the patients had succumbed to Trichinosis we cannot learn.

Years ago we drew attention to the danger people incurred through eating trichinous flesh, and we have continually insisted upon the Government doing something to protect the public health. We were the first to point out—in the *Times*, *Lancet* and elsewhere—the well-established fact that a large percentage of American pigs harboured muscle-worms, and we urged that pork inspection should be adopted as a sanitary precaution. But nothing has been done, except to tell people that all pork should be thoroughly cooked; though thorough cooking is not always possible in the best-regulated kitchens, seldom so among the poorer classes, who most largely consume this flesh.

Under the conditions mentioned, it need not be a matter for surprise that an ascertained and authenticated outbreak of Trichinosis has at length been recorded; the only thing for astonishment is, that such outbreaks were not reported long ago and frequently. This outbreak took place on board a training or reformatory ship for boys, and by what must be considered a mere chance, the malady was traced to its source. The disease was at first believed to be Typhoid Fever, a large number of boys being attacked, and they exhibited symptoms not unlike those of that malady.

There was, however, no apparent reason for the sudden appearance of the malady in question, and almost in despair of being able to trace and remove the cause, the department applied to the Local Government Board for the services of one of the medical inspectors on the staff of that office. The gentleman selected made a careful study of the conditions of life on board the ship affected, and eventually came to the conclusion not only that the cases with which he had to deal were not instances of Typhoid Fever, but that they were traceable to something in the diet of the boys. By-and-by a death occurred, and the medical inspector having consulted with his colleagues at the Local Government Board, and communicated his suspicions to them, the Home Office was induced to give authority, with the consent of the relatives, for the body to be exhumed, and for an examination to take place. The cause of death was then apparent, in the number of trichinæ which filled some of the muscles. The boys on board the ship were fed, it appears, on stated days, on American pork, and it is believed that to trichinæ, taken into the stomach in this food, and which must have retained their vitality in spite of prolonged boiling, were due both the death which occurred and

the other cases of illness which presented so many symptoms of a typhoid character.

Had this outbreak occurred in a family in one of our poverty-stricken localities, a government medical inspector might never have heard of it, and the ordinary medical attendant would, in all probability, have ascribed it to Typhoid or some other fatal malady of frequent occurrence. Surely the public have some claim for consideration in a matter of this importance! Are they not fully justified in asking for some better kind of protection than that contained in the cheap and ineffective advice to cook their pork thoroughly? Cooking their American pork did not protect the boys of the reformatory ship from Trichinosis, and the worthlessness of the advice is one more instance of the imperfect knowledge which has been so often displayed in our dealings with this and other dangerous diseases of animals. But then it is much easier to advise than to act.

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## THE RECENT PUSTULAR EPIZOOTY AMONG HORSES.

In the Veterinary Journal for February, 1879 (p. 76), Mr. Daniel, M.R.C.V.S., published an article on a pustular exanthematous disease which had been prevalent for some time among horses in various parts of England, and the more salient characters of which had been previously discussed on several occasions at the Central Veterinary Medical Society. From the annual report on the contagious diseases of animals in Brabant for 1878, we learn that the malady was observed in several horse-dealers' stables in Brussels during the third quarter of that year. In Mans, a veterinary surgeon who treated many cases, states that they were principally English-bred horses. "This disease was characterised by the presence of very numerous pustules on the region of the back and croup. These pustules appeared as rounded prominences, due to the elevation of the epidermis, which formed, with the hair, a thick brownish crust. After the elimination of this crust, there remained a deep abscess, filled with yellowish pus. The exanthem was so contagious, that it only required putting on a healthy horse the harness worn by a diseased one to produce the disease in a very short time. I have seen it transmitted even after the harness has been washed. Actual contact only could transmit the affection; I have never known it to be conveyed by a volatile virus.

"For treatment, I have recommended cleanliness and the application of dilute carbolic acid. I cannot say that I have been successful in combating this trifling disease, for its duration, notwithstanding the most careful management, was always long, and the ulcers very slowly cicatrised. There can be no doubt that the malady was introduced into Belgium by English horses."

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## NOTES MADE DURING VISITS TO THE REMOUNT DEPOT, SAHARUNPORE, NORTH-WEST PROVINCES, INDIA.

BY C. STEEL, F.R.C.V.S., 16TH LANCERS, ON SPECIAL SERVICE DURING THE AFGHAN EXPEDITION.

*(Continued from page 34.)*

Description of Premises at Studs or Depots.—We will take Saharunpore as the best and most extensive establishment. There are stables with paddocks, and a farm is attached. The stables consist of six ranges of arched sheds about 200 feet long and 25 feet high, composed of mud bricks

with tile roofs; a wall about three feet high runs down the centre, surmounted by open brickwork to a sufficient height for guarding against injuries. There are no partitions or stalls, and the mangers consist of earthen pans supported by platforms composed of mud. The horses stand head to head, and there is a hole under each manger for the circulation of air; to the rear of the horses is sufficient space for the attendants to walk in safety, and without the wall is a verandah also arched; the flooring is of blueish clay, which forms a material, when dry, partially impervious; but it is occasionally found necessary to have this removed and replaced. The strictest cleanliness is enforced, and in consequence the perfection of purity appears to have been secured. Ventilation receives, of course, great consideration in the construction of these stables; and to secure the full benefit of welcome breezes in hot weather, the situation of the building is of great importance, but the architect appears to have overlooked this during the construction of five of them, only one securing the best aspect by being built with its gable ends north and south. The reason for this situation being preferable is, that during hot weather the prevailing breezes are east and west, and it is obvious that in a building two hundred yards long the benefit of these breezes must be curtailed when the sides are not exposed to those points.

The roofs are raised at the eaves, the arches are always open, and altogether the effect produced is satisfactory. Wells and drinking-troughs are placed at the end of each stable; dung is immediately conveyed to pits on the farm situated at some distance; there is, unfortunately, no provision for urine, but the syces are constantly on the watch with cans to catch that fluid when being voided, and this, although contributing to cleanliness, is a system not without its objections. The Hospital Stable is also a lengthened shed built of kiln bricks; it has a semi-arched roof of solid masonry, with ventilating shaft; consists entirely of loose boxes with open brickwork walls; there are verandahs as in the ordinary stables, and "ghamps" are provided—lying in a slanting direction against its porches. These "ghamps" consist of double hurdles, between which straw is placed and into the space of which bands are woven, cord being added for additional security; they act as guards to prevent the ingress of cold winds, and the degree of exclusion can be regulated by the position in which they are placed. There seems to be a difference of opinion as to their further utility, but Mr. Kettlewell, the veterinary surgeon in charge, assures me that they also prevent the too rapid ingress of hot air, the difference in temperature between the outside and inside of the stable when they are used being from 30° to 40° in hot months; and that in stables where they are not used the temperature in the after part of the day is hotter inside than outside. It must certainly be said in favour of Mr. Kettlewell's theory, that these means exactly correspond with those adopted for keeping bungalows cool in India; and it is a pity that prejudice should prevent such an easily ascertained point being at once settled and acted upon. If the temperature can thus be reduced for the comfort and benefit of 50 horses in hospital, why not allow the 1,000 horses in the ordinary stables to share the luxury, and so prevent, in all probability, many of them from becoming candidates for admission to hospital?

The paddocks consist of enclosures of about fifty acres in extent; they are not irrigated, although the Jumna Canal supplies all the neighbourhood with water. They are fenced with wooden rails, which, I am given to understand, are a great source of expense in consequence of the frequent repair necessary as the result of the ravages of white ants. In one part is a plan of division apparently much preferable to the rails, viz., mud banks, similar to those so common in Ireland, surmounted by the prickly aloe plant. These are very effectual in preventing the escape of fresh horses from their pasture,

and although requiring frequent repairs, especially during the rains, must be much more economical. The grass in these paddocks is fairly good, being principally "dup" (*Cynodon dactylon*), and "serwana," or "serrevalla" (*Andropogon*). I could not help thinking that the style of stable which has been described might be adopted with advantage in England, but I am informed that they are considered insufficient protection in cold weather; they appeared to me to be sweet, well-ventilated, clean, and all that could be desired. The farm is about 1,500 acres in extent, and is cultivated for supply of food for the horses; chiefly oats are grown, but there is also a millet called "impey," of which I have a specimen. Carrots and lucern are here also produced. Two hundred bullocks are kept for the cultivation of this farm; the grass upon it is inferior to that in the paddocks, and I was sorry to observe that it was much impregnated with sedge. The land appeared to me to be of the fen kind, and altogetder did not indicate skilful agriculture.

METHOD OF FEEDING, EXERCISE, ETC.—The materials employed for feeding are split gram, ground barley, bran, oats, grass called "dup," "impey" (a millet), "sutto," and linseed. The coarse sedge and reed-grass is used for litter. The ordinary feed for healthy horses in cold weather is five seers (ten pounds) of grain, and bran in the proportion of two seers of gram, two of barley, and one of bran. Younger horses have gram two seers, one and a half of barley, and half a seer of bran; the gram in both instances is soaked. "Walers," on first arrival, are supposed to be favoured, so as to make them presentable, and for this purpose extra "sutto" and linseed are given. In hospital, as a rule, no barley is given, and only two seers of gram and one of bran. Oats without straw are sometimes used as a change of food; but, of course, the diet is left to the discretion of the veterinary surgeon, who can have any article he requires on requisition. In addition to the above-mentioned allowance of gram, etc., "jup" grass is given, the cost of which is a rupee for six maunds in cold weather, and for eight maunds during the rains; four to six pounds of oats in straw, and "impey" (only a rain crop) as green chaff, containing nutritious seeds and saccharine matter.

It will thus be seen that the feeding is decidedly high for horses entirely unworked, and at times without exercise for days together, in consequence of unfavourable weather. The times of feeding are at nine a.m. and five p.m.; the animals are watered three times a day, and always before feeding; in hot weather water is given more frequently, access at all times being free to the water-troughs. The water at Saharunpore is relished, but there is a little excess of lime in it, to which new comers have to become accustomed; and a source of impurity which has to be strictly guarded against is the habit the syces have of bathing in the troughs when not watched. The sole exercise given the depôt horses is that voluntarily taken when turned out in the paddocks, and by the "liberty system" ordered by the stud commission they are supposed to spend the greater portion of the twenty-four hours in freedom. This, however, is practically sadly curtailed; for in hot weather they are only allowed to be out from sunset to sunrise; and when it rains, they are entirely confined to the stable, where they are tied up by the halter, thus injuriously keeping them in a constrained position, which is especially detrimental to the development of the younger animals. It would appear that, in a place so well stocked with beautiful trees as Saharunpore, sufficient shelter would be found, and the hours of confinement to the stable might be beneficially abbreviated.

With the *grooming* I was disappointed. Instead of the wisp, and that invigorating process resorted to in India termed the "mull" (a kind of shampooing performed by the dexterous application of friction by means of the syce's arms), I observed the brush and curry-comb to be almost solely used, a duster very occasionally being also applied.

Considering the large number of horses here kept for a considerable time, it appeared to me a pity that they should be subjected to no training whatever. Surely some preparation might be made for adapting them to their future duty, thereby preventing the bad habits which too often result from idleness, in horses as well as in human beings ; ensuring a certain amount of wholesome exercise, which would assist in the development of the young, and rendering them more speedily available for duty on joining the corps to which they are subsequently drafted. Mr. Kettlewell, V.S., obligingly showed me interesting records of the health of horses, both during the stud and depot systems. Of course, we must be prepared to find the percentage of deaths much greater during the breeding-time, in consequence of the dangers of parturition, infantile ailments, and castration ; but twenty-five per cent. appears rather a large mortality ; yet such was the average. Thanks to stable management, and the comparative absence of juveniles, the death-rate had been reduced at this reserved remount depot to 3·20 per cent. in the year 76-77 ; 2·2 in 77-78 ; 2·36 in 78-79. The diseases most prevalent are skin affections, such as Urticaria, Prurigo, etc. ; Indigestion and Colic (indicating error in feeding, which might be avoided by permitting veterinary supervision) ; Pneumonia and Catarrh, which, it is well-known, ought to be exceptional cases ; Eczema, and Strangles. Nervous diseases are rare ; liver disorders, which may clearly be traced to too high feeding and want of exercise, are frequent, and a most debilitating form of bilious fever sometimes occurs as an epizoötic. Much damage is done by immature breeding, the result of allowing colts and fillies to run together at grass. Out of 800 horses at Saharunpore, I saw twenty foals at foot, twenty that were weaned, and there were ten more mares to foal. These, in the majority of instances, were useless produce, and the dams were irreparably injured. I must remark, however, that six or seven foals were from "Waler" mares who had joined *enciente*. Wounds amongst so large a number of fresh, highly-fed horses accustomed to run out together, must, of course, be expected ; hock-lameness is very prevalent.

Description of Horses at Saharunpore at Present Time.—In all the number of horses is 733, viz., Walers, 356 ; Arabs and Persians, 33 ; Stud-bred (passed for service), 73 ; Stud-bred, two and three years old (not passed), 106 Country-bred, 165 ; total, 733.

No. 1 stable I found occupied by Walers only, which had been selected for horse and field artillery, medium cavalry, and chargers. These horses are known by brands, usually the initial of the breeder, and generally situated on the shoulder. Celebrated brands are sometimes forged, in order to increase the value of the animals ; but such forgeries are easily detected by the initiated, and this is more frequently practised with the E C brand than any other. There were seventy-five horses on either side. I had several brought out for my inspection, and found them generally of very suitable size and substance for military purposes ; but a great variety of blood was evident, and some were decidedly coarse. Most exhibited freedom of action, with the exception of their hock joints, in which they seemed to be generally deficient ; and in many cases there were legitimate spavins, causing absolute lameness. Exostoses of all kinds appear common in "Walers" ; "calf knees" are also a frequent imperfection. Grey horses are strictly prohibited. It is remarkable that although "Walers" are often techy when their fore-quarters are handled or even approached, they seldom show any disposition to kick when a person is passing behind them. Certain peculiarities were pointed out to me as indicating special families, one breed being particularized by a broken appearance of tail, said to resemble that of the scorpion. "Scorpions" are non-enduring horses.

No. 2 stable also contained "Walers."

No. 3 stable. Stud-breds and "Walers," also a few boxes at the end for invalids. This is the depôt for horses returned from regiments for a time, in order that they may have a change of air, rest, and treatment, such as in cases of obstinate unthriftiness, etc., is requisite. Those horses coming from the Karuntadhee stud are marked on the off side with A K ; those from the Home stud (Kurnaul) are marked L on the near side, the letter originating from Lord Lawrence, who established it ; some from the Central stud could be picked out by their peculiarly turned-in elbows and hollow backs, imperfections said to be the result of climate and restriction when young. Here were some "Walers" from Madras, some of a lot of eighty which joined last cold weather, and whose age, I understand, averaged fifteen years ; a few from the Buxar stud, marked B, were remarkable for their size and strength; the Hapur horses are marked H. Of all the stud-breds, the palm must certainly be given to those of the Home stud ; they are level horses, all show freedom of action, and exhibit breeding.

No. 4 stable contained stud and country-breds. Those country-breds that come from Central India are marked on the neck; they are small, but appear sound, and have the credit of possessing good constitutions. It is earnestly to be hoped that Mr. Hallen's efforts will result in considerable improvement in country-breds from the Punjab. The present specimens are anything but satisfactory ; they are deficient in size, possess sickle hocks and bad fore-legs, and in those from every other district, except Central India, there are much the same objections, deficiency and unsoundness of hocks being most conspicuous.

No. 5 stable, country-breds.

No. 6 stable, country-breds.

Committees assemble twice a year at Saharunpore, in the months of October and April, attended by the circle veterinary surgeon (inspecting veterinary surgeon). The director of army remount operations is generally the president, the members consist of an officer of Cavalry, one of Artillery, and one of Hussars. This committee is for the purpose of rejecting those horses that are unfit, and classing those that pass ; the amount of rejections of those sent up from Calcutta and Bombay, I was informed, was formerly two per cent., but now reaches six per cent. This is a very serious difference to account for. With regard to the classing, I was much struck by the number of Hussars and Cavalry horses which remain at the depôt for a long period, in consequence of the supply exceeding the demand ; whereas Artillery horses are drafted without loss of time. Could not the purchasers be informed as to the class of horse required, and the numbers of each class in stock, so as to save the expenditure of twenty-five rupees a month in keeping each of these supernumaries ? The horses at the depôt are solely for the supply of European regiments ; native regiments have a "chunda" (or fund), from which they purchase remounts, the average price not to exceed two hundred rupees each ; every trooper buys his own horse, paying for it by instalments. When the stud existed, the rejections and young stock not purchased by Government furnished an ample supply for the wants of these nineteen regiments ; but of late they cannot possibly obtain horses even at two hundred and fifty rupees, many regiments having an extra number of dismounted men. The 7th Bengal Cavalry had to go to Calcutta to buy "Walers." The Cape horses were considered the best troopers, but that supply has failed. Persians and Arabs are now rare ; in Madras, "Walers" are beginning to predominate, although there are more Persians and Arabs than in Northern India.

In reviewing the success of studs, the recent history of the country has to be taken into consideration. It is believed that, although not absolutely paying, they were, as before stated, doing good service indirectly previous to the

Mutiny ; for any number of horses were then obtainable. In that great struggle, however, which shook our rule to the very foundation, the interests of horse-flesh did not escape considerable damage. Horses were stolen and destroyed, many starved for want of supplies, and breeding was put a stop to. Since that time two famines have contributed to counteract any fresh effort at increasing the supply, and the influx of "Walers" has had a depressing effect on the prices of country-breds in the markets, still further, of course, discouraging production. Enough has been mentioned in this paper to prove that the reserved depôts are expensively conducted, and it must be evident that, according to the present system, "Walers" do not pay. With the paucity of country-breds, Persians and Arabs quite as dear as "Walers," only about one hundred and fifty stud-breds left of the thousands that were bred, it is evident that considerable difficulty must be experienced in properly mounting our Indian troops, especially in the case of an unusual demand—a circumstance seen to be quite possible when we consider our critical political position at the present time. In the event of this demand, money would meet it, we are told, at a very short notice by securing supplies from Australia ; but what could be done if that source became unavailable in consequence of our communication with that country being cut off? Mr. Hallen's scheme really would appear the only promising one now in existence for restoring such an internal supply as is required, and it is to be hoped that Government will not be backward in encouraging a movement of such vital importance. It may be that some revision of his plan is necessary, for there are many who say it does not at present promise success. It is evident that a larger staff must be essential to its well-being, that of course would involve a pecuniary outlay ; but if horses could again be produced in the country of sufficient size and quality, we should be independent of the foreign supply now depreciating the value of what little native produce remains, and is being slowly stimulated by the "horse-breeding operations," so that abundant return would result in the restoration of this particular species of imperial wealth, strength, and independence.

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## THE CAMEL.

(*From "The Asian."*)

THE camel has recently been a good deal before the public in connection with the Afghan wars, and the knowledge one gleans from books of its character and performances are so different to late experiences, that we think a short record of what has become known of the beast may prove of interest. In many respects the camel's powers have been greatly over-rated, and in some respects much under-rated. We have never seen it mentioned that he is a good beast in a stony, mountainous country, and yet a correspondent tells us that he was out the other day with some hill camels, loaded with about two *maunds* each, marching over the hills and rocks of a range at an altitude of 4,000 to 5,000 feet. In many places there was scarcely even a path, but these camels went over the ground with more ease than dismounted horses, and climbed ascents and descents over which no one cared to ride unshod Beluchi mares, and which it was thought no camel could possibly surmount.

Books on natural history have led us to believe from earliest childhood that the camel was a quiet, patient beast, capable of carrying any load, except that last straw ; and of going any distance with scanty food, and no

water except what he carried in his false stomach. Can any one, who has ever been in camp with camels, imagine that the beast is either quiet or patient? How well one knows, on going to bed after giving orders for the night march, that the next two hours will be rendered hideous by the gurgling groans of the camels as they are being laden—groans that until one has had a little experience cause one to imagine that the creature must be undergoing some diabolical torture: then, when his load is complete, and ropes are being laced up, he makes his final struggle, so frequently successful in freeing his tied-up foreleg and upsetting the load, merely, as the beast must or should know, in order that the whole process may be repeated. Even the well-bred *sowari* camel cannot refrain from these hideous groans and gurglings as one mounts him, and he certainly has his revenge by pouring forth into one's face the most sickening odours of semi-digested vegetation.

The camel, moreover, is very stupid, and intensely obstinate. A short time ago, when crossing the Chenab, one of a lot of camels refused to get into the boat, and sat down on the bank with his head over the bulwarks. After a great deal of struggling, one of his forelegs was seized and hoisted over into the boat, then the other foreleg; but still he objected to get in, so a bamboo was placed under him, and he was toppled over into the boat, where he lay on his side groaning and gurgling hideously during the crossing; and on the other side of the river he had to be got out in much the same manner as he was put in.

There appear to be but three races of camels in India. Firstly, the *sowari* or riding camel, a handsome beast with his clear limbs, thin skin, shapely neck, small head, and bright eye, as different to the ordinary camel as the race-horse is to the cart-horse. Secondly, the load-carrying camel of the plains, about as gawky and ugly an animal, after he has passed the age of infancy, as one can set eyes on. Thirdly, the hill camel, also a load-carrier, bred chiefly in Afghanistan, and seen in India only in the cold weather in the *kafilas* of the Kabulees who come down with wool, grapes, and dried fruits. He is a better-looking animal than the camel of the plains, and can be distinguished at once by his shorter legs and the quantity of hair about him, more especially on the forearm.

Riding camels have great powers assigned to them. We believe that in the Bikanir country these camels do occasionally get over 200 miles in thirty-six to forty-eight hours; but they only do this rarely, and are fed up for the purpose on *goor* and alum for weeks beforehand—any good horse, properly trained, would do as much. In fact, the natives in camel countries, such as Rajpootana, say that if you want to go fast, take a horse; if comfortably—*i.e.*, carrying some traps—take a camel.

A gentleman once started with three *sowari* camels, travelling hither and thither through a portion of the Bikanir and Western Rajpootana, and thence through Neemuch to Angur. The trip lasted from the middle of April till about the end of May, and he travelled from twenty-five to thirty miles a day, halting only in Ajmere and Neemuch. One of the three camels carried himself, the second carried his servant, the third some cooking pots and a small tent—each camel also carried its owner. Although these camels were fair specimens of their class, and the country was well suited to them, they seldom averaged more than four miles an hour for the whole march. They could trot six or seven miles an hour on the level, but any ascent or descent, even over the sandy ridges of the Bikanir, at once brought them down to a walk. Neither did they stand the work well, although occasionally cooked up with *goor* and alum; they became weak and footsore, and during the six weeks the whole lot had to be changed twice, so that each camel proved equal only to a fortnight of such work.

In the recent campaign in Southern Afghanistan, camels proved but sorry beasts of burden. Their regulation load was only four *maunds*, but we doubt whether they carried three *maunds* on an average, and they died in such numbers that the transport was only kept going by a constant supply of fresh animals.

The camels were certainly not well treated in the early part of the campaign. The popular notion that a camel could pick up a living anywhere, more specially in such a camel country as Afghanistan, was tried practically, and found to fail. The fact is, that the Afghans themselves take nearly all their camels down to the plains in the winter. Between Quetta and Kandahar not a green leaf is to be seen in January ; the valleys appear as deserts covered with little dry bushes of wild sage, which was the only food a camel could possibly find ; and though the hill camel can manage to obtain a few pickings from these, it was not so with the plains camel. Later on in the campaign, the camels got regular rations, two *seers* of corn and four *seers* of *bhoosa* daily, the latter being, so far as could be judged, about as much of that material as a camel cared to eat. But even with his rations the camel was a poor beast, and could not compare with the mules which, carrying two-thirds as much as the camels, were prepared at small provocation to buck their loads off, and were seldom at a loss for something to eat. Sometimes they would gnaw their ropes, sometimes their blankets, and they appear to make quite a hearty meal off the soil of the camping-grounds, trodden as it was into a mixture of earth, *bhoosa*, and dung, flavoured with a *soupçon* of dead camel. Towards the close of the campaign a large proportion of hill camels had been obtained, which were of course much better suited for the country and the bitter climate of Afghanistan than the camel of the plains ; but the constant work, combined with the want of proper grazing, told severely even on them. When passing through Mooltan, in June, there might be seen many of these hill camels there, evidently suffering as much from the heat as their cousins of the plains had suffered from the Afghan winter.

It would surely repay Government to appoint a few veterinary surgeons to study the anatomy and pathology of the camel. At present our knowledge is rather like that of the vet. in Afghanistan, who on being asked by the General whether he could not do something for the camels, which were dying by twenties, replied that no man could do anything for a beast that had three stomachs ; and went on to add that, although you might know what the camel had eaten to-day, yesterday, and the day before, yet you could not tell which of the three meals was now disagreeing with him, or which particular stomach it was in ; and moreover, if you gave the beast medicine, the odds were three to one against it going into the right stomach.

A good deal of the mortality amongst the camels in Afghanistan was due to Lung Disease, and in climates where snow is encountered, the camel requires a covering for his neck as well as for his body.

It would be interesting if some of our readers would give their experiences of camels—for instance, the fastest rate at which a *sowari* camel can trot for an hour, and the distances they can travel in twenty-four or forty-eight hours ; the weight that plain and hill camels can be made to carry for days consecutively ; the best food for them, etc., remembering that hearsay evidence is of little value in such matters.

# Proceedings of Veterinary Medical Societies, etc.

## ROYAL COLLEGE OF VETERINARY SURGEONS.

QUARTERLY AND SPECIAL MEETINGS OF THE COUNCIL, HELD JANUARY 14TH, 1880.

THE PRESIDENT in the chair. The SECRETARY intimated that the President had presented to the Library of the College two volumes of his work, "On the Principles and Practice of Veterinary Medicine and Veterinary Surgery."

On the motion of Mr. DRAY, seconded by Mr. FLEMING, a vote of thanks was passed to the President for his presentation.

Professor WALLEY also presented to the Library his work, "On the Four Bovine Scourges."

Mr. DRAY proposed, and Mr. FLEMING seconded, a vote of thanks to Professor Walley, which was unanimously agreed to.

### *Correspondence.*

Letters were received from Professor McCall and Mr. Cuthbert, of Leeds, regretting their inability to attend the meeting.

A letter was read from Mr. Hunt, junr., stating that his father, in consequence of a paralytic stroke, would never again be able to attend the examinations in London, and conveying to the Council his father's thanks for their sympathy and kindness.

The PRESIDENT regretted the cause of Mr. Hunt's resignation, but said there was nothing left but to accept it.

Mr. DRAY moved that the resignation be accepted.

Mr. P. TAYLOR seconded the motion, which was carried.

Mr. FLEMING hoped that the Council, in intimating their decision to Mr. Hunt, would feel itself in duty bound to express their great sympathy with him in his affliction, and to thank him for the various services he had rendered both to the Council and the profession ; also to express the hope that he would be restored to health, and enabled to serve them as heretofore. He would make a motion to that effect.

Professor WALLEY seconded the motion.

Professor SIMONDS fully endorsed the sentiments of Mr. Fleming. Mr. Hunt had for many years acted conjointly with himself as Inspector to the Royal Agricultural Society at its annual shows, and he could say, from long experience, that a more efficient officer could not be found. He was desirous of recording, not only his sympathy with Mr. Hunt, but also his thanks for the valuable services he had rendered, not only to the Council, but also to the profession, by holding important and responsible offices.

The PRESIDENT said he could endorse what had been said by Professor Simonds. He had known Mr. Hunt for many years as an Examiner, and had observed the kindness and urbanity he had always extended to the students. He had already expressed his sympathy to Mr. Parker (from whom he had received a letter in reference to Mr. Hunt), and how, individually, he felt his resignation ; and he had thanked Mr. Hunt, in the name of the Council, for his services.

### *Election of Examiner.*

On the motion of the SECRETARY, seconded by Mr. DRAY, Mr. John Roalfe Cox was elected Examiner, in room of Mr. Hunt, it being understood that the term of office was for five years.

The ballot having been taken, Mr. Cox was declared unanimously elected.

*Resignation of the Secretary.*

The PRESIDENT read a letter from the Secretary, tendering his resignation.

Mr. DRAY, as a very old friend of Mr. Coates's, and as one of the members who voted for his election, said he had endeavoured to prevail upon him to remain in office. He had been a most faithful and energetic servant to the Council, and, while regretting the cause of Mr. Coates's resignation, he was afraid that the Council would be under the painful necessity of accepting it.

Mr. MORGAN seconded the motion.

Mr. FLEMING spoke of the diligence and faithfulness with which Mr. Coates had always discharged his duties, and trusted that some means would be found by which to convey to him the regret which the Council and the profession experienced at the severance of one who had so long been connected with the whole body of the profession.

Professor SIMONDS expressed his individual regret at Mr. Coates's resignation, and bore testimony to the efficiency and honesty with which he had performed the duties of his office. He suggested that their regret should take some tangible form—say of an honorarium for a given length of time, giving him so much per annum. He was only speaking on the broad principle of the case, and had no particular scheme to lay before the Council.

Mr. HARPLEY endorsed the opinions of the previous speakers, and referred to the services Mr. Coates had rendered to him in his year of office as President—a year the labours of which were rendered more arduous from the fact that the Juries Bill was before the House, entailing a great deal of correspondence on the part of Mr. Coates.

Mr. FLEMING said the thanks of the Council were due to Mr. Coates for his offering to continue the duties of Secretary until another Secretary was appointed, and to instruct his successor in the duties of his office.

The PRESIDENT, in putting the motion to the meeting, expressed his regret that Mr. Coates's resignation had taken place during his year of office. He should support most cordially any scheme for a tangible recognition of Mr. Coates's services.

The motion was then carried.

Professor SIMONDS moved that the question of the amount to be awarded to Mr. Coates be postponed, on the understanding that it was placed on the agenda for the consideration of the Council at the next quarterly meeting.

Mr. HARPLEY seconded the motion, which was carried.

A Committee, consisting of Messrs. Collins, Dray, Fleming, Harpley, and Professor Simonds, was appointed for the purpose of selecting a new Secretary.

On the motion of Mr. WHITTLE, seconded by Professor WALLEY, it was resolved that the new Secretary be not a member of the Council.

Mr. COLLINS proposed, as a further instruction to the Committee, that the future Secretary be not a member of the profession.

Mr. DRAY seconded the motion.

Professor WALLEY proposed, as an amendment, "That the new Secretary should either be a member of the College or not."

Mr. REYNOLDS seconded the amendment.

Mr. BLAKEWAY supported Professor Walley's amendment, on the ground that it would be an injustice to take the office entirely out of the hands of the profession.

On being put to the vote, fifteen members voted for Professor Walley's amendment, and four for Mr. Collins's motion.

The amendment was therefore declared carried.

On the motion of Mr. REYNOLDS, seconded by Professor WALLEY, the

Secretary's salary was fixed at £120, with the same allowance as the late Secretary.

Mr. Coates was then called in, and informed of the Council's deliberations and decision.

Mr. COATES, in a few words, expressed his regret at being compelled to sever himself from the Council, and thanked them for their kindness and consideration.

*The Proposed General Meeting.*

The SECRETARY read a letter from Mr. Loch, enclosing the opinion of Mr. Wolstenholme, Q.C., relative to the requisition for calling a general meeting of members of the Royal College of Veterinary Surgeons. The opinion of counsel was to the effect that a discussion raised in any ordinary meeting of the members of the Royal College of Veterinary Surgeons, as to the course of practice of the Royal Veterinary College, would not be wholly irregular; but he did not mean the inference to be drawn that any resolution come to at such meeting would have the least binding power over the Royal Veterinary College. The Chairman would, perhaps, be technically right in refusing to allow such discussion, or to enter any resolution on the subject in the minutes; at the same time he did not see that to allow the discussion or to enter a resolution on the minutes, expressing the opinions of the members present, on a matter personally affecting them, would be wrong. No further action would require to be taken, except by communicating the resolution to the Veterinary College, and no opportunity would be given for questioning the regularity of the proceeding. It would, however, be right to state the resolution as passed by the members present, and not describe it as a resolution of the meeting.

Professor AXE said it occurred to him that the main point in question was, whether it was not beyond the jurisdiction of the Council, as a political body presiding over veterinary science, to allow themselves to call a meeting to consider a subject which was quite beside the object for which the College was founded; and he thought the opinion of counsel stated that there was no such power.

Mr. FLEMING said that, according to the latter portion of the opinion, the matter seemed to be left in the hands of the President, and there would be found there a very important "perhaps," which left it, to a large extent, optional. With regard to the question itself, he thought the instructions given to counsel had not been properly framed. Whether the petition was acceded to or not, was a question more for the profession than the Council to decide, inasmuch as the object of the petition was as much for the protection of the profession now as was the movement lately made in the Council to modify the Charter sought to be obtained by the Royal Veterinary College.

Mr. HARPLEY said that on the previous day there was a meeting of the General Purposes Committee of the Royal Veterinary College, and the subject of the petition was discussed. It was mainly pointed out to the Governors that counsel's opinion was adverse to the power of the President to call a general meeting of the body corporate to discuss the matter in question; but the Governors were perfectly willing to listen to any complaint the profession might have against them or their College. In the present instance, it was suggested by the Chairman that a small sub-committee of the General Purposes Committee be deputed to communicate with a small section of the gentlemen who, with Mr. Moore, raised the question, and that the matter be discussed at the Royal Veterinary College on any day they wished to name.

Mr. FLEMING pointed out that the opinion of counsel did not state that the profession had any right to petition the President to hold a general

meeting of the profession. Those who drew up the petition must, he thought, have been misled by the bye-laws, and if so, it was not their fault. They thought they had a grievance, which, on the face of it, was apparent at the time they drew up the petition.

Professor AXE submitted that the gentlemen on whose behalf the petition was drawn up were very grievously wronged ; but the Governors of the Royal Veterinary College were always accessible, and it was a very great pity that the Council had been called upon to do anything in the matter. It was a matter for the profession, and the profession ought to approach the Governors in a proper manner.

After some further discussion,

Mr. HARPLEY moved that an answer be sent to Mr. Moore, to the effect that the Council are not able to comply with the petition of the memorialists.

Mr. DRAY seconded the motion.

Mr. GREAVES said that the resolution gave effect to the view he had all along held. He was of opinion that the grievance complained of was not nearly of the magnitude that the petitioners had set forth. He agreed with Mr. Harpley that the Governors of the Royal Veterinary College should receive a deputation from the town and country practitioners. It was unfortunate that counsel's opinion had not cleared up the point at issue.

The resolution was then put and carried.

### *Report of Examiners.*

The SECRETARY reported that at the meetings of the Court of Examiners, held January 5th and 6th, ten students from the Royal Veterinary College passed their examination and obtained the diploma of the College, and three were rejected ; also that two students from the New Veterinary College, Edinburgh, and one from the Glasgow College, were rejected. At the meetings on the 7th and 8th January, thirteen students from the Royal Veterinary College passed their "second examination," and one was rejected. At the meetings on the 9th and 10th fifteen students passed their "first examination," and six were rejected.

A letter was received from Dr. Dunsmure, enclosing certificates from the Edinburgh and Glasgow schools, and stating that the examinations would take place in Edinburgh on January 22nd. He also wished to know whether the Council would be willing to pay the expenses of three rejected students who had gone up to London for examination.

The SECRETARY explained that the students by thus coming to London had saved the Council considerable expense, which would have been incurred had they called a special Board of Examiners to meet in Edinburgh or Glasgow.

It was resolved, on the motion of Mr. TAYLOR, that the three students should have remitted to them their third-class return railway fares.

Letters were received from a number of rejected students, asking their case to be re-considered, with a view to their coming up for another examination.

The SECRETARY was instructed to write in reply that the application could not be entertained.

A letter was read from Mr. Green-Armytage, asking for another diploma, in lieu of one lost in action at the Cape.

The Secretary was instructed to forward to Mr. Armytage the usual certificate, stating that he was a member of the College.

A letter was received from Mr. Menzies, Secretary of the Highland and

Agricultural Society, asking for two copies of the Supplemental Charter, which, the Secretary stated, had been forwarded.

The SECRETARY stated that upwards of forty applicants, holding the Highland and Agricultural Society's certificate, and who had paid their fees and been approved of by the Principals of the Scotch Veterinary schools, desired to have a diploma.

The Secretary was instructed to send the diploma to each of the applicants.

*The Matriculation Examination.*

Professor SIMONDS read an official communication from the Secretary of the Royal Veterinary College to the Secretary of the Royal College of Veterinary Surgeons, dated 14th January, 1880, which stated that the Governors approved of the scheme for the matriculation examination for all the schools, and were desirous of impressing upon all the schools the necessity of a full agreement in submitting to the same rule. If they did this, the Governors would interpose no difficulty.

The SECRETARY stated that the following letter had been addressed to the Principals of the various schools:

Royal College of Veterinary Surgeons,
10, Red Lion Square, W.C.
*Dec. 6th*, 1879.

Gen. Sir F. Fitzwygram.
Jas. Collins.
Geo. Fleming.

SIR,—The committee, as per margin, appointed by the Council of the R.C.V.S. to draw out a scheme for the proposed matriculation examination to be held under the direction of the Council at all veterinary schools, beg to submit herewith the draft of an examination sheet, with two conditions relating to the examinations, for your favourable consideration.

If you approve of the scheme, will you be good enough to reply accordingly for the information of the Council.

Professor Simonds.
„ Williams.
„ Walley.
„ McCall.

I have the honour to be, sir,
Your obedient Servant,
WM. HY. COATES,
*Secretary.*

1. No school shall be compelled to admit a candidate, even though he may pass the required examination.

2. Any school may hold a higher examination.

The following letters were received in reply :—

New Veterinary College, Gayfield, Edinburgh.
*December 9th*, 1879.

DEAR SIR,—I return "Educational Scheme," approved of. I, however, think that "Dictation" should be added to English Grammar.

Yours faithfully, W. WILLIAMS.

Royal (Dick's) Veterinary College,
Clyde Street (off St. Andrew's Square), Edinburgh.

W. H. COATES, Esq. *December 8th*, 1879.

SIR,—I am in receipt of your communication—with draft scheme of the new matriculation examination—which I have laid before the College Council.

We agree with the general scheme therein drawn out (but we think the first condition anomalous and unnecessary), providing the suggestions contained in my letter of the 20th ult., to Sir Frederick Fitzwygram are embodied in it.

I am, yours faithfully,
THOMAS WALLEY,
*Principal.*

Glasgow Veterinary College,
83 and 85, Buccleuch Street, Garnethill, Glasgow.

W. H. COATES, Esq. *December 25th*, 1879.

DEAR SIR,—I am in receipt of your favour regarding the matriculatory examination of veterinary pupils, and after consulting with Principals Walley and Williams, I cannot see my way to approve of the scheme which you have submitted to me under the authority of the Council of the Royal College of Veterinary Surgeons. Some time ago I had the honour of a visit from Col. Fitzwygram, and in course of conversation he asked if I would be willing to come to an understanding with the other colleges as to the standard of qualification and other conditions upon which students would be admitted to the colleges, and to which I gladly replied in the affirmative; but it is something very different to desire me, as you have now done, to hand over the power which this College possesses of fixing the conditions upon which pupils will be admitted to the undisputed control and authority of the Council of the Royal College of Veterinary Surgeons.

That there is an urgent necessity for the colleges uniting and fixing a uniform educational test I freely grant, but the colleges, in my opinion, can carry through this reform without calling in the aid of the Council of the Royal College of Veterinary Surgeons, and a step in that direction has already been taken; but should it fail in accomplishing the objects sought, I shall be glad to submit the point or points in dispute to the decision of your Council.

I am, yours truly,
JAMES MCCALL,
*Principal.*

Professor SIMONDS moved that the four letters now read be placed upon the minutes.

Mr. DRAY seconded the motion, which was carried.

Professor WALLEY said he wished to correct a mistake in the minutes. It had been stated that he had laid the matriculation scheme before the Trustees, but he had done no such thing. The matter had never been brought before the Trustees at all, but simply before the College Council, which usually dealt with these matters.

Mr. GREAVES thought it would be an advantage to each college if the question of preliminary examination was left in the hands of the Royal College of Veterinary Surgeons. It would be a matter of much regret if the schools did not act in concert. He feared that if the matter was left to the colleges there would be a sort of feeling of rivalry and competition that would step in and prevent them acting in concert. Notwithstanding Professor McCall's letter he (Mr. Greaves) thought that gentleman might be induced to leave the matter in the hands of the Council, which would be a great advantage to the profession.

Mr. FLEMING thought it was a matter of regret that Professor McCall had dissented from the arrangement. If there was one thing more necessary than another, it was that there should be a uniform system of education. It was a mere elementary education which the Royal College asked for, and he was sure that no school having the welfare of the profession at heart, would object to its students being submitted to such an examination. He trusted Professor McCall would see his way to join the other schools in acceding to the proposal, which was made entirely for the good of the profession, and would, if carried out, do much for the benefit of the schools themselves.

On the motion of Mr. HARPLEY, seconded by Mr. TAYLOR, the scheme for matriculation was referred to the next Council meeting.

The obituary notice was read.

The following letter was read from the Secretary of the Royal Agricultural Society :—

Royal Agricultural Society of England,
12, Hanover Square, London, W.
*December 16th*, 1879.

DEAR SIR,—I am instructed by the Veterinary Committee to ask you to be so good as to ascertain from the Council of the Royal College of Veterinary Surgeons whether they could undertake to nominate Examiners for the Society's veterinary prizes and medals, so that identical examinations might be held simultaneously in Edinburgh, London, and, if necessary, in Dublin. The object in view is to promote a co-operation between the several agricultural societies, so that the prizes might be equally open to graduates of the Royal College of Veterinary Surgeons, whether they are resident in England, Scotland, or Ireland, and whether they have been educated at the Royal Veterinary College or at any other recognised veterinary school.

Your early attention to this matter will much oblige

Yours very faithfully,

W. H. COATES, Esq. H. M. JENKINS, *Secretary.*

Mr. HARPLEY explained that the letter was in consequence of a meeting of the Royal Agricultural Society a few weeks ago. The Society regretted they could only send up one or two candidates to compete for their prizes, and they were now in communication with the Highland and Agricultural Society in the hope that Scotland would unite with them in having the prizes made general among the students. He did not know if the Council could now deal with this question, but he should be glad if some instructions were laid before the General Purposes Committee at the next meeting.

Mr. FLEMING moved that a letter be sent to the Secretary of the Royal Agricultural Society, informing them that the College would be happy to assist the Society in every way, and would appoint Examiners as soon as the Council had ascertained that an agreement had been arrived at between the Royal Agricultural Society and the Highland and Agricultural Society of Scotland.

Professor WALLEY seconded the motion, which was carried.

The examination for the Royal Agricultural Society's prizes and medals was fixed to take place at such time as would best suit the convenience of the Examiners.

Messrs. Mayer, Gresswell and Lepper were appointed Examiners.

The consideration of the examinations to be held in Scotland was deferred.

It appeared from the report of the House Committee that the negotiations for the premises in Fitzroy Square had fallen through, the solicitor having expressed his doubts as to the genuineness of the title.

*Finance Committee.*

The report stated that the vouchers and receipts for payment during the past year had been examined and found correct. The present liabilities were £131 6s. 3d., which the Committee recommended should be discharged. This would leave a balance at the bankers of £318 8s. 7d.

On the motion of Mr. WHITTLE, seconded by Mr. CARTWRIGHT, the report was received and adopted.

Cheques were ordered to be drawn for the current expenses.

*Annual Dinner.*

Professors Williams, McCall, and Walley, and Mr. Robertson, of Kelso,

were appointed as a committee to make arrangements for the annual dinner at Edinburgh.

This concluded the business of the quarterly meeting.

A Special Meeting

was then held. The amended Bye-law No. 7, having been read,

On the motion of Mr. Dray, seconded by Mr. Taylor, the amended Bye-law No. 7, was adopted, to be confirmed within fourteen days, in accordance with the Charter.

The question of the alteration of Bye-law No. 4, previously moved by Mr. Collins, who had left the room, was postponed until the next quarterly meeting, as was also the consideration of the following notice of motion by Mr. Fleming :—"That no student receive the diploma of the Royal College of Veterinary Surgeons until he shall have attained the age of twenty-one years, and that previous to going up for his final examination he shall furnish the Secretary of the Royal College with the baptismal register of his birth, or a certified copy thereof."

The consideration of the alteration of Bye-laws Nos. 32, 33, and 47, by Professor Walley, was also postponed to next meeting.

Mr. Fleming gave notice that at the next quarterly meeting he should move, "That steps be immediately taken by the Royal College of Veterinary Surgeons to obtain an Act of Parliament for the protection of the title of "Veterinary Surgeon," or other titles conferred by Royal Charter."

On the motion of Mr. Dray, seconded by Mr. Taylor, a vote of thanks was accorded to the President, and the proceedings terminated.

## LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

The usual quarterly meeting of the above Association was held at the Blackfriars Hotel, Manchester, on 17th December, 1879. W. Dacre, Esq., President, in the chair. The minutes of the last meeting were read and duly confirmed, after which Mr. E. Faulkner proposed, as a member of this Association, Mr. Litt, of Bolton. Mr. Fergusson seconded the proposition, which was carried.

Mr. Peter Taylor proposed Mr. R. Roberts, of Kendal, as a member—seconded by Mr. Woods, and carried.

After considerable discussion respecting the election of Lieut.-Gen. Sir F. Fitzwygram, bart., Prof. Williams, Messrs. Geo. Fleming, Peter Taylor, and Thomas Greaves, as Honorary Associates of this society, it was decided by Rule XVII., Section I., That members could not be made Honorary Associates, only strangers, or any other person who was not a member, and, according to Section II. of same rule, there must be three-fourths of the members present before any person can be so elected.

Mr. T. Taylor therefore proposed that the names of Lieut.-Gen. Sir F. Fitzwygram, bart., Prof. Williams, and Mr. Geo. Fleming be left on the list, and brought forward whenever there was a quorum for such an election. Seconded by Mr. T. Greaves, and carried.

Mr. James Lambert then opened the adjourned discussion on Mr. Geo. Fleming's paper, read before this Association at the last meeting, viz., "The Responsibility of the Veterinary Surgeon." He said: When I spoke on the above subject at the last meeting, I ventured to say that I thought an amount of responsibility was assumed in his paper, which is out of proportion to the remuneration received by veterinary surgeons. The two subjects which appear to me to merit most attention are, the examination of horses as to soundness, and injuries inflicted in shoeing. As to the latter, I will only say that it appears to me most unjust, for many reasons, that

veterinary surgeons should be liable ; as to the former, we can see that veterinary surgeons are becoming more and more in request for this duty ; and as it is done for (considering its importance) a small fee—generally half-a-guinea—we must take care that we do not admit, for mistakes, a pecuniary liability absurdly unproportionate to the payment received. Many veterinary surgeons were alarmed by the apparently severe opinion of Mr. Fleming's paper on the question, and began to think whether examining horses for soundness, and veterinary practice generally, was not a very risky business. In Ireland the veterinary surgeons disclaim any pecuniary liability for their opinion, and their charge is one guinea, and examinations are of everyday occurrence with them. I do not see why we in England, and in fact everywhere, should not also charge a guinea. I also believe, and say it advisedly, that a veterinary surgeon has not much legal pecuniary liability in his practice ; when he makes a mistake, what he has most to dread is loss of reputation, and consequently loss of profit.

Mr. Lambert quoted the opinions of several barristers and solicitors ; they had looked over causes in the law-books, but found none ; so cases are rare, and it was anticipated that they will continue to be so. "They all concurred in the opinion that there must be proved gross ignorance or negligence, and you must decidedly outweigh your opponent by numbers if you can, and if possible, throw a professor or two into the scale. This is a nice state of things—'Outweigh your opponent by numbers ;' it shows what lawyers think of professional evidence, and the same applies to the medical profession. These opinions show us how urgently reform is needed, and that veterinary surgeons should be united, and never try to make money in the witness-box at another's expense. Professional evidence should be selected by the court, and not by the advocate. Professors generally should never appear in order to secure a fee, in cases where they have no concern—in fact, they should only appear in order to prevent gross injustice ; if they appear for any other reason, it is degrading to their teaching office, and to the college to which they belong."

Mr. T. A. DOLLAR said he quite agreed with Mr. Lambert. If a veterinary surgeon used ordinary diligence and sagacity in operations and in giving opinion, using good instruments, being steady, and taking every possible care, then he cannot be liable for any loss that may arise.

Mr. T. TAYLOR, A. LAWSON, T. HOPKIN, JOHN LAWSON, etc., etc., all coincided with the opinion of the above gentlemen.

Mr. PETER TAYLOR thought the responsibility of the veterinary surgeon to be very great. "Your clients do not bring forward a claim against you at the time, but when they find one or two experts whose opinion is against you, then they try what they can do. Mr. Lawson says, 'Who can expect a young veterinary surgeon, coming from a college, to be able to do everything right?' I contend they are liable if they do not know, and if experts say they have made a gross mistake. We have a great difficulty to contend with. All horses are different—no two alike, and men differ in opinion of them, consistently, honestly. What we must endeavour to do is, to do our duty honestly and straightforwardly, giving our opinion to the best of our ability, and risk the consequences."

Mr. GREAVES observed : The discussion on this subject will have done our profession a great service if we only arrive at a clear, enlightened, and logical conclusion—a conclusion which will not only commend itself to our senses, but which will be, at the same time, legally sound, and a safe protection. I have studied this subject as carefully and as earnestly—nay, perhaps more carefully and more earnestly than the majority of my professional brethren. At the time I compiled my paper upon this subject, which I read before the Liverpool Association in 1868, I perused every passage in "Oli-

phant's Law of Horses," and every paper that I could find which had reference to veterinary surgeons' responsibility. I was so anxious to make my paper worthy of my profession, that I sought the opinion of Messrs. Lock and McLaren, of London, the solicitors to the College ; they considered the whole matter carefully and fully, and gave me their opinion. They also advised me to get the highest counsel's opinion upon the subject. I gave them authority to obtain this, which they did ; these several opinions will be found recorded at 256 and following pages in the *Veterinarian* for 1868. A short time ago, I received a letter from Mr. Tom Taylor : it contained a solicitor's opinion upon this subject, the pith of which is, we are bound to bring a sufficiency of skill and sufficiency of care in the performance of every operation, and in the examination of every horse as to soundness. Where this is not exercised, we deserve to be made to suffer. This inefficiency and negligence must be gross, and evident to ordinary thinking men ; but where proper skill and care are practised, and such opinion is disputed and contested, then, he says, we must get the opinion well supported by quantity and quality of veterinary evidence.

Since our last meeting, I, in company with a solicitor of eminence, have carefully drawn up a form of certificate, which I now propose to this meeting, and through it to my profession. This is as follows :—

"I hereby certify that I have this day, at the request of Mr. ———, of this city, examined a bay gelding in respect to soundness, and that I consider such horse to be —— years old, and sound. This certificate is given after careful examination, to the best of my judgment and belief, but subject to my not being held pecuniarily responsible for the opinion expressed in such certificate. "*Signed* THOMAS GREAVES."

I strongly commend this form of certificate, especially when it is a high-priced animal we are examining, or when we apprehend advantage may be taken of us. There may be some of my professional brethren who will pooh-pooh this form of certificate, and say it cannot be binding ; they may say "See the notice on the railway passenger's ticket, it is not legally binding ;" but I am advised that there is not the slightest similarity between the two cases. Perhaps some may cavil who have never given five minutes' deep, earnest consideration to the subject in their lives ; but I ask the more thoughtful, enlightened, and earnest men in my profession to ponder it over seriously ; for we cannot conduct our daily avocation, such as it is, with a halter like a millstone round our neck, as is now the case, liable to be tripped up at every step we take, with other eminent experts giving evidence in a court of law against us. *Something must be done.*

If the want of skill, or the want of due care is palpable, then neither this form of certificate or any other form of certificate can protect us ; nor is it right it should do. But if we have exercised proper care and brought to bear sufficient skill, then the above form of certificate, "*it being a notice to the party of the terms, and the only terms, on which the certificate is given,*" will entirely remove our responsibility, and will prove a perfect and complete protection.

Mr. J. B. WOLSTENHOLME had placed upon the table a number of the capsules of the "Trichina Spiralis," with a short history. He said : Some months ago, a human subject being dissected in Owen's College, Manchester, was found to contain Trichinæ. A portion of muscle was given to me, in which I found a large number of the capsules of the *Trichina Spiralis.* Of the specimens I exhibit, one is an entire capsule, the other a section, showing its position relative to the muscular fibres. All the capsules have undergone calcareous degeneration (being the calcareous particles of the first discoverer), and must in consequence have been in the subject for a long time.

These specimens were viewed with great interest by members, and a cordial vote of thanks was accorded Mr. Wolstenholme.

The SECRETARY then read a communication which he had received from the Secretary of the Liverpool Veterinary Medical Association, requesting the members to consider a resolution passed at a recent meeting of that society, with respect to the election of candidates to the Council of the Royal College of Veterinary Surgeons. After considerable discussion, the matter was left in the hands of a committee, which was at once formed, viz., Messrs. W. A. Taylor, J. B. Wolstenholme, A. Lawson, E. Faulkner, the President, and Secretary, and a resolution was passed, requesting the Secretary to communicate with the Secretary of the Liverpool Veterinary Medical Association, thanking him for his letter, and intimating to him the decision on the above.

The following gentlemen were then unanimously re-elected officers of the Association for the ensuing year :—President, Mr. W. Dacre ; Vice-Presidents, Messrs. T. Hopkin, John Lawson, and W. A. Taylor ; Treasurer, Mr. A. Lawson ; Secretary, Mr. Sam. Locke.

A cordial vote of thanks to the office-bearers for the past year, which was carried by acclamation, closed the proceedings.

SAM. LOCKE, *Hon. Sec.*

## LIVERPOOL VETERINARY MEDICAL ASSOCIATION.

THE ordinary quarterly meeting of this Association was held at the Medical Institute on the 14th November, Joseph Welsby, Esq., President, in the chair.

The minutes of the previous meeting were read and confirmed.

Mr. ELAM then communicated the following notes of a case of "Fracture of the Sesamoid Bones of both Fore Legs in a Cob Mare," exhibiting the specimens. He said : On the 21st of June last, a grey cob, 14.2, six years old, was brought to my infirmary suffering from a slight cold, the owner informing me that he intended to sell it as soon as it had quite recovered. On carefully examining it in the loose box ; I found that it appeared to move slightly lame, or tender, but as the owner had not mentioned anything regarding that when he left it, I thought that it might be of no consequence, and that it would likely pass off with a few days' rest.

A few days after the owner called, and I drew his attention to the fact, when he said, Oh, yes ; she had gone a little tender about a month ago, first on one foot and then on the other ; he had her shoes taken off and her feet carefully examined, but could find nothing to account for the tenderness. He then had a pair of india-rubber pads put on, thinking that they might improve her, and she went very well after. However, as there was a little swelling and heat about the fetlock joints, I had a cooling lotion and cold-water bandages applied to them.

In ten days she appeared to have quite recovered her usual health, and the lameness had almost completely passed off, when the owner called, and said that he would send his son for her in the morning, which he did, and my groom remarked how much improved she walked as she was being led out of the yard.

In less than half an hour after, a messenger came back to say that the mare lay down in the stable as soon as she got there, and broke out into a profuse perspiration, and that she appeared to go suddenly lame just before she arrived at the stable.

The owner requested my groom to take her back to my infirmary, but before she had got half the way, her fetlocks came in contact with the ground and she was unable to proceed any further. A float was then pro-

cured, into which she was placed and taken to the infirmary. When I returned I found her lying quietly in the box, and so far as one could observe, very comfortably. I got her lifted up on to her feet with great difficulty, but every step she took the toes of both fore feet turned up, and the inferior extremities of the large metacarpal bones came in contact with the ground. After a careful examination in connection with the symptoms, I became quite satisfied that the sesamoid bones of both fore legs were fractured, and that treatment was out of the question. The owner called on the following day, and after explaining the nature of the fracture to him, I advised him to have her destroyed, which he agreed to.

A *post-mortem* examination showed all four sesamoid bones fractured transversely about the lower third, the upper two-thirds having the appearance of being torn away by the powerful suspensory ligament, whilst the inferior third was held by the inferior sesamoidal ligaments, thus exposing the internal structure of the bone.

I am of opinion that the bones had been diseased at least twelve months, and that the animal would have shown signs of it to a close observer.

The above communication gave rise to a very interesting discussion, in which almost every member present took part. The following is a brief summary of the principal points touched upon :—

Mr. ELAM, in reply to questions by the various speakers, said that he could not detect any diseased condition in any of the other bones of the body; and that, from a careful examination of the sesamoid bones, made immediately after taking the specimens home, he was of opinion that they were affected with Caries.

The general opinion expressed by the other members, however, was in favour of the diseased condition being of the nature of Osteo-porosis, from the fact that the lesions occurred simultaneously in both fore-legs, without the infliction of any adequate strain to produce them if healthy. The absence of pain when the animal was at rest was considered to contra-indicate the presence of Caries, and that, although from the specimens being dry, and surrounded with their periosteal covering, and having the ligaments attached, no very decided opinion could then be given, still it was stated that when the long bones only are affected, the presence of the diseased condition is difficult to determine until after the bones have been either macerated or boiled.

As to the cause or causes of Osteo-porosis no very definite opinion was arrived at. It had been observed in every variety of breed of horses, and to occur under different systems of feeding. It generally affected young animals, although not invariably so. The most remarkable development of this disease was related by Mr. Woods, of Wigan, in which, he said, about a dozen of Hungarian ponies, belonging to a mining firm in his district, became almost simultaneously affected, the acute symptoms manifesting themselves immediately on being put to work, after having rested during Whit-week. One of these ponies was ten years old, and had been in the pit for seven years, while none of the others were over five years old, and had been in the pit for from two to three years.

He (Mr. Woods) attributed the disease, at the time, to the ponies getting too much Indian corn while idle; and it was a curious fact, that after its withdrawal no more cases occurred at that period.

The general opinion expressed by the members, however, was, that the principal cause of this disease was some constitutional diathesis, which certain other conditions might intensify. And although in Mr. Wood's cases no previous symptoms had been noticed, in the cases related by the other members, symptoms of lameness of a shifting and recurrent character had been invariably observed.

Mr. ELAM then communicated the notes of two cases of "Death from In-

testinal Calculi." The first case was that of a chestnut mare belonging to a detachment of the Royal Dragoons, which had arrived in Liverpool the previous day, from Colchester. She was reported to be in good health and spirits during the whole of the journey, and only began to show signs of pain on arrival in Liverpool. Briefly, the symptoms were—Acute abdominal pain, pulse fifty, visible mucuous membranes of a dull pale red ; mouth hot and dry, with a loathing of food and water. The fourth day she drank water freely, and ate a little ; no fæces were passed at all during the attack. In exploring the rectum he observed that no solid fæces could be felt, indicating that the obstruction was very near the rectum.

The treatment adopted was, repeated small doses of aloes in conjunction with carbonate of ammonia, frequent injections, and gave small doses of chloroform to allay the pain. On the evening of the fourth day the pulse became accelerated and weak, and the symptoms of pain ceased. She died on the following day, the fifth after her attack.

He (Mr. Elam) made a *post-mortem* examination, and found the calculus shown firmly embedded in the rectum, about five feet from the anus.

Mr. Elam's opinion was, that the long march of over two hundred miles had caused or accelerated the backward movement of the calculus from the large intestines onward to the rectum. He considered that a careful exploration of the rectum in all cases of abdominal affections is an invaluable aid to a correct diagnosis, and might lead in some cases to the removal of the obstruction.

The other case was that of a bay cart-mare, six years old, which I (Mr. Elam) was asked to attend in July last. I found her manifesting symptoms of Colic, for which I gave her a stimulating drink, and administered ʒiij. of aloes. The next day she appeared better, but in about a week after I was again sent for to attend her, when the owner now told me that she had been griped a little every day for a fortnight. I had her brought to my infirmary.

The symptoms were, briefly, as follows : Visible mucous membranes of a dull pale red, mouth hot and dry, frequent pawing, and restless when lying; no symptoms of acute pain, rolled very seldom, but had a perfect loathing of food and water. This condition continued for ten days, when the bowels began to act freely and she commenced to eat and drink heartily. Three days after she was discharged as all right. The treatment, as in the other case, was repeated small doses of aloes in conjunction with the carbonate of ammonia.

In about a week after I was again sent for to attend this mare, when the same symptoms presented themselves. As I now considered the case a hopeless one, and the owner being a poor man, I recommended him to turn her into a good field, and if she should die, to inform me. The mare died in about three weeks after. I made a *post-mortem* examination, and found a large calculus at the junction of the large or double colon with the single colon.

Mr. STORRAR also exhibited some specimens of calculi, pyramidal in shape, which had been so formed by their action on one another in the bowels.

A general discussion followed, of which the following is a brief summary.

(*a*) That there is no reliable diagnostic symptoms of the presence of calculi, except in such recurrent cases as the second one in Mr. Elam's communication.

(*b*) That, although in individual cases, such as the formation of hair-balls in calves, and where an animal has been known to swallow some peculiar article which has formed the *nucleus* of a calculus that has been either evacuated or found, *post-mortem*, at a certain period afterwards, there are no very reliable data upon which to form an opinion as to the length of time which these calculi require to form. As an instance of this, Mr. T. Taylor referred to a horse within his own practice, which had been in the habit of manufac-

turing these interesting articles for several years, their size varying from that of a billiard ball to that of a marble. These he discharged in quantities of six or seven at once, at intervals of four or five months.

Still, he enjoys excellent health, and is in good condition, and has never been known to have an attack of Colic, his (Mr. Taylor's) attention being only called to him by the attendant, with the quaint remark that his horse has commenced the marble trade again. The character of the food, and the gastric habits of the animal was believed to have considerable influence in the formation of calculi.

(*c*) Repeated doses of purgative medicine, in all cases where the bowels did not respond to an ordinary dose, was generally condemned, nerve-stimulants in such cases being generally recommended.

Dr. GREENWAY suggested the administration of metallic mercury in cases of obstinate obstruction, as is done in the human subject; but several members considered that the horizontal position of the bowels in our patients, combined with the anatomical arrangement of the *Ilio-cæcal valve*, militated against its success.

(*d*) In all cases of abdominal affections in the horse, accompanied with Tympanitis, tapping was generally recommended, as being both safe and beneficial. The operation should be performed in the same region as is tapped for hoven in cattle.

(*e*) As to the best course to be adopted in cases where the presence of calculi had been diagnosed, it was considered by some that purgative medicines, either *aloes* or *oil*, did more harm than good.

Mr. STORRAR then communicated the following notes of a case of "Ruptured Abdominal Muscles."

On the 17th October last I was called to see a very valuable brood mare, of the heavy Shires breed, seven years old, and the dam of three foals. She had not been in harness for several years, having been laid aside from work for breeding purposes and exhibition. She had been kept up to the mark (to use showing phraseology) till the shows were over, when it was considered prudent to allow her to get a little down in her bulk, her last foal being still unweaned. She was grazing in a very rich pasture during the day, and at night was taken up to a large, comfortable loose box, where she had a small portion of grass, a feed of bruised oats boiled, and bran. She again had a similar feed in the morning before being turned out to pasture. She was an uncommonly good-tempered animal, never running or exerting herself, but most industrious as a grazier—a magnificent animal, weighing nearly eighteen cwt., lengthy, and beginning to get a little low in her back, presumably from having had several foals, and from being a good doer. Such was the animal which I was called in to see.

The groom's statement was, that on the previous evening, when calling her to come into her box, he thought she went a little stiff on the off hind leg. She ate her mash with relish, and having left her for a short time, he went back, and found her lying down comfortably. Before going to bed he again looked in at her, and found her up and eating her grass. These circumstances relieved his mind so far, that he did not think it necessary to say anything to his master that night.

On the following morning, still thinking her somewhat stiff on the off hind leg, he informed his master, who went into the field, but was unable to satisfy himself that anything was wrong; he, however, said to the groom, "You know the mare's general appearance better than I do, and since you do not think her right, go for Mr. Storrar."

Upon my arrival the groom pointed out a swelling in the right flank, very slight, soft, and evidently œdematous; there was also a little similar swelling behind the elbow.

The mare was still very fat, but the groom said that she had sunk very much in her appearance—more than she ought to have done, considering what she was eating. The mare seemed low in vital force, her pulse soft and languid—she kept up her appetite as usual.

There was no swelling of the legs as we usually find in cases of poor blood—yet these swellings were œdematous—and the case seemed a likely one to recover by a change of diet and a little alterative medicine. I therefore gave her a six-drachm purging ball, which acted very moderately, while she continued to eat her mashes with relish.

I ordered the green grass to be stopped. Good old hay to be substituted, the bruised oats and bran to be given dry morning and evening, and her usual walk at pasture to be allowed her during the day. After the medicine had acted she seemed better on the right side, but on the 19th, when I again saw her, there was a very considerable œdematous swelling on the left side of the flank—this to me was more puzzling than ever. I asked if there was any cow or other animal in the field, that could have interfered with her ; as this looked more like an injury to the parts than anything else I could think of ; but I was told that there was no animal in the field that could have injured her.

I gave her diuretic medicine, and expected a favourable result from this and the change of diet, but the swelling continued to increase, and I requested that some other professional man should see her. Upon the arrival of my professional friend we agreed to puncture the swelling so as to allow of an escape of serum. Upon my doing so, and introducing my finger to break up the cellular tissue, there followed an alarming flow of serum and red corpuscles, which I hastened to stop. Of course there was a certain amount of clot formed, owing to the blood from the skin, but the great bulk of the fluid was watery.

Suffice it to say that, notwithstanding every attention, the animal died on the morning of Saturday, the 25th.

The *post-mortem* showed that the swelling in the flanks had arisen from a rupture of the transverse abdominal muscles ; the laceration proceeded to extend, no doubt, every time she raised herself from her bed—which she did very frequently—immediately before death. On the left side the rents were right through the muscles to the skin, and in several places the serous effusion in the abdominal cavity was great, while here and there a black clot floated in it.

The special interest attached to this case is the previous history of the animal's life and treatment, and the very unusual occurrence of such a case. I have on two previous occasions seen mares give way at the attachment of the "rectus abdominis muscle" to the pelvis—thereby allowing the abdomen to descend very low, and giving the animal a very unseemly appearance ; but both these cases occurred very near to the time of the mares' foaling.

The mares foaled, reared their foals, and did well. In the present case the mare was in foal, but the fœtus was small, and could not be a factor in the case.

The pathological questions which I have asked myself, and which I now suggest to you for your opinions, are these :—

Had the repeated fattenings to which the mare had been subjected for years, produced any tendency to fatty degeneration of the muscles of any part of the body ?

The heart was fatty, but weighed about eight pounds—quite as heavy as I would have expected the heart of an animal out of condition to have been.

Had the very limited exercise which the mare had been subjected to a tendency to generate fat at the expense of the muscular tissue ?

Had the bulky, moist, non-nutritious grass, of which she partook so largely, a tendency to distend her abdominal organs, and to relax the system generally, so that the animal may be said literally to have fallen to pieces?

In my very large experience among brood mares of all breeds, I have not met such another case, and I have introduced it to your notice to-night in order that I may elicit your valuable opinions upon it. I have purposely withheld all names—for reasons satisfactory to myself. I trust, however, that you will agree with me, that the case is a very interesting one.

Mr. HILL, who stated that he was the veterinary surgeon who consulted with Mr. Storrar over this case, said that he differed in opinion from Mr. Storrar as to the immediate cause of death, and also as to the time when the muscular lesions took place.

The mare, he said, had been repeatedly prepared for exhibition. She had taken sixteen first prizes; she had then a foal suckling her, and a fœtus in utero.

On his arrival he certainly did not take a serious view of the case, for beyond the swelling, the pulse was a fair one, and the animal bright. As usually adopted by himself in such cases he suggested hot fomentations, and subsequently, when the effusion had become fluid, scarifications; and, medicinally, diffusible stimulants, with iron and nutritious diet. However, before the fomentation was commenced, the puncture alluded to by his friend was made, and whatever issued—whether serum, serum and blood, or blood—she soon began to pant, and within a few minutes was down on her side, gasping for breath. The wound was plugged and ligatured, and he ordered a dose of brandy immediately; but she died on the fifth day, though at one time they entertained hopes of her recovery.

Within the right auricle of the heart was a white fibrinous clot, weighing one pound one ounce, and proceeding from it moulds of the large blood-vessels. This clot Mr. Storrar had omitted to mention. The blood-vessels about the abdomen also contained shreds of white fibrine, which, Mr. Storrar remarked, as he gathered them on the point of his knife, were like worms. He (Mr. Hill) was of opinion that the mare had died from excessive internal hæmorrhage, and that the *ante-mortem* clot in the heart was the immediate cause of death; for so soon as it filled the auricle and blocked up the valve, death would inevitably follow. There was an entire absence of blood in the system, but floating about amongst the intestines were large clots of blood.

He considered that the swelling was œdematous and due to debility, and that there was no rupture of the muscles when the first swellings appeared in the flanks. Besides, the swelling was considerably in front of the flank, and towards the median line (it was here illustrated by Mr. Hill on the black-board) when scarified; and this, with the fact that similar swellings occurred at the elbow in the first instance, before these appeared, convinced him that no rupture existed. Mr. Hill said that there was no rupture of muscular tissue until about an hour before death, when she became very restless, and threw herself down on her bed with great violence, falling flat on the abdomen. Had the rupture taken place before this date, there would have been inflammation of the peritoneum and muscles, also strangulation of intestine and discoloration; whereas, in the *post-mortem* examination, not one of these symptoms was present, neither did the mare at any time exhibit abdominal pain. Immediately before death she was taken in labour, and had she lived another hour, would undoubtedly have aborted.

There was also hepatisation of the right lung, for which treatment, at one stage of the case, was adopted. This Mr. Storrar had likewise omitted to mention.

Dr. GREENWAY considered that the immediate cause of death was Anæmia of the brain ; of course the clots would be the means of shutting off the supply, and might in that sense be considered the cause of death. Speaking of the formation of clots, he said that in cases of sudden death the heart would be found empty, or nearly so. When death was less sudden, the heart would be found filled with dark-coloured clots, extending into the vessels. But when death was prolonged, as in this case, there would be white fibrinous clots in the heart, and moulds in the vessels leading from it. He was of opinion that the kidneys should have been examined in this case.

Mr. GREAVES was of opinion that the cause of death dated from the time that the accident to the muscles happened, which was at the first appearance of the swelling in the flanks.

He said, some fat horses faint before you can get two quarts of blood away from them.

He was therefore of opinion that, first, the rupture and escape of fluid, then the scarifying and further draining the system of blood and serum, brought on fatal syncope, which was the cause of death.

Mr. REYNOLDS said that animals fed for exhibition purposes had a tendency to the formation of fat in place of muscle. He was of opinion that in this case the abdominal muscles had become deficient in tone, and had partially ruptured at the first appearance of the swelling.

Mr. WELSBY, President, said that the mare, being a keen pasturer, having no work, and getting very little exercise, would have a decided tendency to produce fat at the expense of muscle. He concurred in the opinion that there must have been rupture of the muscles at the first appearance of the swelling, and that although the swelling was considerably in front of the flank, as pointed out by Mr. Hill, when it was lanced, still, he saw no objection in that, as the fluid would gravitate to the most dependent part.

Mr. ELAM said, in reference to the state of the lung mentioned by Mr. Hill as being an important factor in this case, that hepatisation of the lung could take place within a period of four days prior to death.

Mr. STORRAR in reply said : The important point for consideration was, did the cause of death commence at the *flanks* or at the *heart?* There was no indications of derangement of the heart's action when the swellings first appeared in the flanks. Besides, there was no filling of the extremities, effusion into the chest, or between the fore legs, as we generally find associated with Heart Disease, or in œdematous swellings arising from debility.

There was no indication, either, of anything being wrong with the chest until after we had been treating her for several days. The hot fomentations, in his (Mr. Storrar's) opinion, relaxed the tissues more and more, and consequently increased the effusion which led to internal congestion. There was tenderness of the throat observed the first day, followed by disease of the chest the second day.

There is no doubt that her violent action immediately previous to death greatly aggravated the lacerated condition of the abdominal muscles. But taking all the symptoms into consideration, and the order of their development, he could not help arriving at the conclusion that the cause of death commenced by rupture of the abdominal muscles, and that the clots in the heart did not exist for any length of time prior to death.

Mr. TOM TAYLOR exhibited a beautiful specimen of a brain taken from a horse which had an acute attack of Apoplexy.

The history of the case is briefly as follows :—

I (Mr. Taylor) was called to see a horse said to be suffering from disease of the kidneys. I found him suffering from brain pressure. There was the characteristic slow pulse, thirty-six per min. He was about thirty years old, and had been blind for five years. I got him led with difficulty to my

infirmary. Administered a large dose of physic, and applied cold water to the brain. The bowels acted well in two days, after which I blistered him on the poll; but he made no improvement, and I had him killed by cutting the carotid artery. I had the brain carefully removed, taking off the base of the skull first, which I consider a preferable mode to the usual plan of taking off the top first.

The following is a description of the brain :—

The brain itself was healthy, so also the main blood-vessels. The dura mater, however, showed, on the right side of the basal portion, considerable thickening, and in some parts a calcareous condition; these results being probably due to Pachymeningitis. The thickened area corresponded to the posterior part of the frontal lobe and a small portion of the temporo-sphenoidal lobe, on the under surface of the right cerebral hemisphere, and extended inwards over the pituitary body and optic chiasma; it encroached but slightly to the left of the middle line.

In the midst of the thickened dura mater, and apparently between its outer and inner layers, an effusion of blood from one of the meningeal vessels had given rise to a large clot, which measured one and a half inches from before backwards, and one and a quarter inches at its widest part.

The clot was of tolerably recent formation, and showed, under the microscope, blood-corpuscles and debris, without any crystals of hæmatoidine such as are found in old apoplectic extravasations.

The subject of the election of representatives to the Council of the R.C.V.S. was then discussed, and the Secretary was requested to communicate with the other V.M. Associations, to ascertain their opinions on the matter, so as, if possible, to secure unity of thought and action.

The following gentlemen were then unanimously elected officers of the Association for the ensuing year :—

Mr. C. W. Elam, President; Messrs. W. Woods, James Storrar, and James Welsby, Vice-Presidents; Mr. George Morgan, Treasurer; D. Hutcheon, re-elected Secretary.

A cordial vote of thanks to the retiring President, Mr. Welsby, which was carried by acclamation, closed the meeting.

DUNCAN HUTCHEON, *Hon. Sec.*

## NORTH OF ENGLAND VETERINARY MEDICAL ASSOCIATION.

THE quarterly meeting of this Association was held in the Douglas Hotel, Newcastle-on-Tyne, on Friday, November 28th, 1879; Mr. D. Dudgeon, the President, in the chair.

The minutes of the preceding meeting were read and confirmed.

A letter was read from Mr. D. Hutcheon, secretary of the Liverpool Veterinary Medical Association, the consideration of which was postponed until the next meeting.

Mr. MULVEY related the history of a very interesting case of "Spinitis," the subject being in the owner's possession a week, when he became ill. Mr. Mulvey attributed the case to the animal having been recently docked, the tail being excessively seared, and being driven a long distance. The case was improving, and Mr. Mulvey did not despair of it making a good recovery with a long rest. After hearing the remarks of several members on the above case, the President called on Mr. Mulvey to read his paper on "Injuries to the Coronet and Feet."

Mr. MULVEY said: In fulfilment of the promise given at our last meeting, it becomes my duty to introduce a subject for your discussion this evening, and although I had a certain amount of diffidence in doing so, yet having an

earnest wish for the prosperity and firm establishment of this Association, I considered that it was the duty of every individual member to do all in his power to promote its welfare, and therefore I come before you to make a few observations on "Injuries to the Coronet and Feet." Injuries to the feet of the horse I need not tell you are amongst the most intricate and difficult cases, and yet are the most frequent with which we, as veterinary surgeons, have to contend. The foot of the horse is made up of an internal vital portion enclosed in horny structure, and it is on this account that the difficulty arises. Inside a horny box we have highly-organized structures, so that anything which perforates this box and injures ever so slightly the vital structures it contains, often produces results the most serious. I purpose first calling your attention to injuries to the coronet ; these may arise from various causes : the most frequent are treads, overreach, and in collieries and on railways, from the wheel of a truck or tub running over the coronet, and in the hind feet ; in some instances from striking the coronet against the sleepers, and in others from the habit acquired by many ponies and horses of sliding down the inclines. In this manner the coronet or a portion of the hoof is often scrubbed, and sometimes cut completely through by a jagged rail. Another cause of injury is by the foot getting fast between the crossings or switches, the animal being thrown violently down, causing bruise to the coronet, and occasionally fracture of the os suffraginis or coronal process of the os pedis ; secondly, injuries produced by pricks in shoeing, by nails, wire, or other sharp substances being trod upon and perforating the sole, and by bad shoeing producing corns.

A tread is a contused wound on the inside of either hind foot, caused by one foot being brought forcibly upon the coronet of its fellow.

Overreach is a blow upon the heel of the coronet, produced by the hind foot overreaching the fore foot of the same side. These injuries may be more or less serious. In the majority of instances, simple bruise and abrasion of the skin of the coronet is all we have to contend with. In these cases the treatment I should adopt would be to remove with the scissors any skin that may be detached. Cleanse the wound and apply the following lotion :—

℞ Tr. Myrrh Comp. . . . . ʒij.
Sol. Zinc. Sulph. ad. . . . ʒviij.

This treatment, with a day or two's rest, will generally be found sufficient In other cases, a great amount of inflammation is induced in the parts by the force of the blow, often causing suppuration. Pus forms, which burrows downwards through the soft structures contained within the hoof, producing quittor ; or when the injury happens to be in front of the coronet, open oint may be the result, or the skin of the coronet may already be in a diseased condition, the animal suffering from cracked or even greasy heels. The local irritation from this cause induces the animal to scratch and stamp upon the itching coronet, and being shod, as most cart-horses are, with high calkins to the shoes, the probability is that serious injury to the coronet is the result. I cannot better illustrate this than by relating to you the history of a case of the kind which has lately come under my notice. The subject was a grey waggon-horse, five years old, seventeen hands high. My attention was called to him by the driver informing me that the horse was continually stamping in the stable, and that there was a discharge from the coronets. On examining them I found that there was an eruption of a carbuncular nature, some of which had burst and were discharging copiously ; others had not yet come to maturity. I ordered the mixed feed (which consisted of maize, peas, oats, and chopped hay) to be taken from him, and gave soft food, and a dose of aperient medicine ; and after cleansing the wounds, had them dressed with carbolic acid liniment, at the same time left instructions for the shoes, which

had very high calkins, to be removed. This undoubtedly was not at once carried out, and during the day the animal struck the off coronet with such force with one of the calkins of the opposite shoe as to break the skin and make a very ugly wound, which induced so much pain and inflammation in the foot as to bring on a high state of irritative fever. The symptoms, when I next saw him, were pulse between seventy and eighty, breathing hurried, leg continually drawn up under the body ; animal frequently lying down and moaning, then jumping up again as though the pain was beyond endurance, and I have no doubt it was. I at once had the shoes off, slightly thinned the soles, placed the off hind foot in warm water for a time, then dressed with solution of Liq. Plumbi. and solution of the extract of Belladonna, and afterwards put the foot in a large bran poultice, and gave three times a day the following mixture :—

℞ Spts. Æth. Nit. . . . . ʒip.
Liq. Ammon. Acet. . . . . ʒip.
Tr. Acon. Flem. . . . . ɱxv.

I continued this treatment for three or four days, and still the animal was suffering great pain, although not quite so acute. I now began to find the discharge had mixed with it what was very like synovia. I then changed the treatment, and applied flannel swabs around the coronet, keeping them continually wet with cold water, and applied all over the coronet two or three times a day solution of Zinc. Sulph. At the end of about ten days the coronet was still enlarging, and the animal suffering almost as much pain as ever, the foot never being near the ground. I now thought I would examine the sole again, and had it completely removed. Finding that the pus had gravitated till the whole of the sole was hollow, and that a large sinus extended completely through the foot into the navicular joint, and from which there was a copious discharge of synovia, I then tacked a flat shoe on the foot with two or three nails, so as to be able to confine the dressing, and injected just within the wound, from the bottom, a weak solution of Hyd. Chlor., and applied a smart blister to the coronet ; but do what I would—and I think I tried almost everything—all was of no avail. No sooner did one sinus seem to heal up than another broke out, and finding that the discharge was now mixed with blood and was becoming fœtid, I concluded that the case was hopeless, and therefore had him destroyed, and have brought the bones of the foot for your examination. From their appearance you will see how utterly without hope the case was, as the os coronæ, os naviculare, and os pedis are all involved in disease ; ulceration of the whole of the articular surfaces ; and in the case of the os coronæ the ulceration extends to both sides, and a large amount of morbid bone has been thrown out. The coronal process of the os pedis has completely disappeared, and from the appearance of this portion of the bone I am somewhat inclined to think that it was here the mischief first commenced, perhaps by fracture.

I now want to draw your attention to those injuries which I find so frequently occurring in colliery practice, viz., the wall of the foot being cut through by a jagged rail, or by the wheel of a tub or waggon running over the foot. These injuries, if attended to at once, are not so difficult to treat as would at first sight appear. I first have the part thoroughly cleansed from all grit and dirt, then, with the rasp or knife, remove the sharp edges of the horn, which will be found to be pressing upon the inflamed and swollen sensitive laminæ beneath, endeavouring to round the edges and removing any horn that may be loose or detached. Then immerse the foot in a pail of warm water and apply a good bran poultice, frequently renewed after a day or two. I remove the poultice and apply to the wound a salve composed of tar and lard melted together, to which I add, when cold, sulphate of zinc ʒj.

to ʒj. This ointment is applied on tow, and maintained in position by continuous folds or wrappings of tarred cord. I generally find these cases do well, but every now and then the horse or pony so injured is worked on for days before anything is said about his being lame. Grit and dirt works into the wound, the horn on the inside quarter, where the injuries generally occur, becomes softened, a disagreeable ichorous discharge squeezes out of the wound, and the animal is very lame. In this state of affairs I often find it necessary to remove almost the whole of the quarter, and sometimes a portion of the sole, when, after immersing the foot in warm water for a time, I place on the foot a round or bar shoe, seating it so that there shall be no pressure on the injured side, and dress over the parts either with Antimon. Chlor. or Acid Nit., then apply tow over all the exposed surface, and tie the foot loosely up. After a day or two remove the dressing and apply daily the Ung. Zinci Sulph. Co. I have frequently found in these cases that a portion of the os pedis has been injured, or necrosis takes place as the result of the injury ; and in many cases I have removed large portions of the bone which have become detached, and after scraping away any spiculæ that may remain, and dressing in the manner mentioned, the cases have done well. Occasionally we come across cases where a waggon-wheel has run over the front of the foot, not cutting the horn, but crushing and bruising the parts beneath. In these cases the animal suffers great pain ; the limb is continually drawn up under the body, the animal flinches on the least pressure to the foot, the laminæ are generally so much injured that extravasation of blood takes place, and the consequent swelling of the soft structures contained within the unyielding hoof necessarily causes the most excruciating pain. Recently I have had a very severe case of this kind, in which, after some days had elapsed, pus formed and made its way out at the coronet, although I had before removed a portion of the sole, finding that it was partly underrun. I now passed the probe upwards, and discovered that a portion of the os pedis was exfoliating immediately in front and about an inch below the coronal process. I thereupon removed the horn from the wall to within half an inch of the coronet, and with the forceps took away about half an inch of the pedal bone. After dressing with a solution of carbolic acid and Tinct. Myrrh. Co., and placing pledgets of tow over all, I had affixed to the foot a shoe having a clip at each side of the toe ; and although for a time I was troubled with luxuriant growths from the exposed laminæ, which had to be kept down by application of Antim. Sesq. chlor. and pressure, the case has progressed satisfactorily.

Corns—bruise of the inner angle of the sole of the foot between the wall and bars, more often on the inside and almost always confined to the fore feet, due to undue pressure on the heels generally caused by the shoe, but may arise from other causes, as by a stone becoming fast between the shoe and frog, the pressure causing bruise and rupture of small blood-vessels, and consequent extravasation of blood, which percolates through the fibres of the horn. Should the bruise be severe and the cause not removed, or the injury not attended to, suppuration is the result, pus forms, and unless an outlet is given to it by the removal of the horn, it burrows upwards through the soft structures and makes its exit at the coronet. The more simple cases of bruise to the foot, called corn, are easily got rid of by removing the cause and poulticing the foot for a short time, should the cause, as is too often the case, be the result of a wrong system of shoeing, viz., the shoe being seated or bevelled on all the sole surface, except where it comes in contact with the heels. Thus you will find that the only bearing the sole obtains is at its weakest part, viz., the heels, the wall of the foot carrying all the rest. This unequal pressure is, in my opinion, the most frequent cause of corn. The treatment of those cases of corn in which suppuration has taken place is often very troublesome. I commence by removing all the underrun por-

tions of the sole, and ascertain by means of the probe to what extent the internal structures are involved. In many cases I find that the quickest treatment consists in inserting a seton through the sole and bringing it out in the heel, thus giving a free exit to any pus that may have formed, and producing, by the stimulus of the seton, a healthy state of the parts. After keeping the seton in the wound for a week or ten days, during which time I should have it dressed daily with stimulating digestive ointment, I remove it and have the parts syringed every day with solution of Zinc. Sulph., and place on the foot a round or bar shoe.

Amongst the most frequent cases of injury to the sole of the foot are those caused by pricks in shoeing. These injuries are often difficult to discover, especially when the nail has been drawn by the smith, and a fresh one inserted. I am always most careful to examine the nail-holes in every case where there is the least doubt as to the seat of lameness, even if the lameness is said to have come on suddenly, and the horse has not been shod for two or three weeks ; for over and over again have I found on examining the foot in these cases that a nail has penetrated, perhaps very slightly, through the horn, and the animal may evince very little pain or lameness for a considerable time, when suddenly he is noticed to be lame, and on removing the shoe and examining the foot I have found a great portion of the sole underrun. Occasionally lameness may arise from the nails being too close to the laminæ, although not actually through the horn, yet so nearly as to press upon and bruise the sensitive parts, and if not removed speedily produce so much inflammation that pus forms, and being absorbable, it diffuses itself beneath the horn in every direction ; in other cases the nail may have been driven in with such force as to penetrate, and even fracture the os pedis. Only the other day my attention was drawn to a pony in one of the collieries in which, in shoeing, a nail had taken the wrong direction. The smith, by some means or other, had not noticed the animal to show any pain or lameness at the time ; nearly a week elapsed, when the pony was found to be very lame. The shoe was removed, the foot examined without result ; next day matter was observed to be oozing from the coronet, the horn separating at its junction with the hair. It was then my attention was called to the case. I immediately had the foot thoroughly searched, and soon found that the whole of the quarter was underrun, and on passing the probe detected fracture of the wing of the os pedis. I then ordered the pony to bank into hospital, removed the whole of the horn from the outside quarter of the foot, then with the forceps took away perhaps three-quarters of an inch of the os pedis. After cleaning the wound and dressing with carbolic acid liniment, and covering over all with tow and bandage, the case has done well.

In addition to injury from pricks in shoeing, the sole of the foot is peculiarly liable to injury from being brought forcibly in contact with sharp substances left carelessly about on roads, such as nails, glass, wire, etc., etc. The successful treatment of injuries caused in this manner depends to a great extent upon the part of the sole perforated. Not long since I was looking over the ponies in a colliery, when on making one that had just come from work stand over in the stable, I noticed that he was very lame, and on running my hand down the leg and around the coronet to ascertain the cause, my hand came in contact with something protruding above the heel, and on picking up the foot I found that a lamp nail, some four inches in length, had passed completely through the foot, going in at the outer angle of the sole and coming out in the heel. It took all the force we could exert to draw it out with the pincers ; of course, a considerable quantity of blood followed its withdrawal. All the treatment adopted was to foment and poultice for a day or two, and in the course of a week he was again at work, apparently very little worse. But how different is the result if the nail, be it only a small one—and small

ones, I find, generally do the most harm—happens to have perforated anywhere about the point of the frog, probably injuring the tendon of the flexor pedis, and resulting in open joint, and perhaps Tetanus ; in these cases the pain is often so acute that sympathetic fever, and even death is the result. Of course, our first care must be to alleviate the constitutional symptoms. I generally give, in the first place, a dose of purgative medicine, and then administer, three or four times a day, the fever mixture as mentioned in the early part of this paper. I have the sole thinned till it gives to pressure, and apply warm fomentations and soothing applications to the wound, as solution of Liquor Plumbi, or cover the wound with powdered camphor or extract of belladonna, and put the foot into a good warm bran poultice. It too often happens in these cases that the nail has perforated either into the joint, or so near that from the amount of inflammation set up the joint becomes opened. When the injury is of such a character as this, the case generally terminates fatally. I have had very many such cases, and with varying success in treatment ; I have tried almost everything in its turn. Should the coffin joint be open and a large discharge of synovia, I have sometimes used a single injection of solution of Hyd. Chlor. ʒj. to ʒj., or tincture of iron just within the wound ; at other times, and I think with the most success, I have injected Liquor Plumbi pure, then applied externally, on a large pledget of tow, a powder consisting of Pulv. Alum, Pulv. Aloes, and flour, and left it for a day or two, keeping the foot as perfectly at rest as is possible, and had cold wet flannel bandages applied to the coronet. In other cases I have applied a good smart blister to the coronet, but it too often happens when the injury is of the serious nature I have described, that do what we will, the animal succumbs. Should, however, the discharge of synovia be arrested, the animal not suffering so much pain and making a little use of the foot, then we have good ground for hope. I should now commence to dress the wound—Ung. Zinci Sul. Co. applied on good pledgets of tow, and stimulate the coronet with repeated mild blisters, and after a short time has elapsed, turn the animal out to grass, the walking about and using the foot often being of great service.

And now, gentleman, in conclusion I must thank you for the patient hearing you have given me. Very imperfectly I have endeavoured to place before you a brief outline of some few of the various injuries to the feet which are daily brought under our notice. I am not presumptuous enough to suppose that I have told you anything but what you were already acquainted with, but I do hope that the observations I have made, crude though I know they are, may be the means of eliciting the opinions of all here, and that the discussion which will ensue may tend to a further knowledge of the subject, remembering the words of the wise man, "In the multitude of counsellors there is wisdom."

A discussion followed the reading of this paper, in which all the members present took part, and the further discussion on it was adjourned until next meeting.

G. R. DUDGEON, *Hon. Sec.*

## SCOTTISH METROPOLITAN VETERINARY MEDICAL ASSOCIATION.

THE quarterly meeting of this Association was held on 10th December, in the London Hotel, Edinburgh.

Mr. Rutherford, Edinburgh, presided. The office-bearers for the ensuing year were elected as follows :—Mr. Connochie, Selkirk, President ; Messrs. Aitken, Borthwick, and Young, Vice-Presidents. The present Secretary was re-elected.

The PRESIDENT gave notice that at next meeting he would move for the appointment of a visiting Committee to wait personally on members of the

Association, and other veterinary surgeons within a reasonable distance of Edinburgh, with a view to inducing them to do all in their power, by regular attendance and otherwise, to contribute to the well-being of the Society.

The SECRETARY read a communication which he had received from the Secretary of the Liverpool Veterinary Medical Association, requesting the members to consider a resolution passed at a recent meeting of that Society. The resolution was to the effect "that the members of the Liverpool Veterinary Medical Association were not prepared to submit to the profession the name of any gentleman as a substitute for any of those gentlemen who retire by rotation in May, 1880, from the Council of the Royal College of Veterinary Surgeons."

Some discussion on this subject ensued, and the members were unanimously of the opinion that while some of the gentlemen referred to in the above resolution deserved their support, the Association should take steps to secure the better representation of the Scottish section of the profession. The Secretary was desired to thank the Secretary of the Liverpool Veterinary Medical Association for his communication, and to reply to this effect.

Mr. RUTHERFORD, Mr. BORTHWICK, and the SECRETARY were appointed a committee to issue circulars to the holders of the veterinary certificate of the Highland and Agricultural Society, pointing out the advisability of at once obtaining the diploma of the Royal College of Veterinary Surgeons, as a means of qualifying themselves to vote at the next election for members of Council.

Mr. RUTHERFORD exhibited a patent composite horse-shoe. This was of a material which somewhat resembled gutta-percha. It had been made and patented at considerable expense, and was stated to be very durable, besides having other advantages. It was fixed to the hoof, not in the ordinary manner, but by means of screw nails. He had caused the shoes to be worn on horses doing only half-work, and found that they did not last more than three days.

Professor WALLEY showed the œsophagus of a three-year-old cart colt, which was immensely dilated. The case occurred in the practice of Messrs. Corbett and Pringle, Newcastle, the animal having been purchased by the owner the day prior to death, and turned into a grass park for the night. When seen by Messrs. Corbett and Pringle, he was in a desperate condition, breathing with great difficulty, coughing violently, and discharging large quantities of saliva from the mouth. These gentlemen diagnosed dilatation and impaction of the œsophagus, and prognosticated a speedily fatal termination of the case. The prognosis was shortly verified. The œsophagus, trachea, larynx, and a small portion of lung were sent to Professor Walley for inspection. The gullet was immensely dilated throughout. At its most dilated part its circumference was fourteen inches. The muscular layer was hypertrophied to the extent of half-an-inch, but otherwise it was healthy. No stricture or organic disease existed either in the gullet or cardiac orifice of the stomach. The left laryngeal muscles were atrophied, and the laryngeal and tracheal mucous membranes inflamed. Both larynx and trachea were filled with a frothy fluid mixed with ingesta. The small portion of attached lung showed considerable carnification.

The difficult question to solve in the case was the cause of the dilatation, as no mechanical obstruction to the passage of ingesta existed. Death had evidently been caused by asphyxia, as the result of the passage of ingesta into the bronchial tubes, probably in the act of vomition.

Professor WALLEY also exhibited the bones of the hock and fetlock of a cow, showing the results of diffuse metatarsal Periostitis.

*Subject.*—A small Ayrshire cow, aged.

*History.*—His attention had been directed to the animal during his

course of inspection of dairies, about six weeks prior to death, when she was in slings, and under the care of Mr. Rutherford. He had then observed that the leg was enormously swollen, and that two or three fistulous openings existed in the fetlock and hock joints respectively. A discharge of pus similar to that usually found in sinuses, issued from the openings, and there was evidence, in the shape of cicatrices, of others having existed. The animal was in low condition, but was eating and giving a tolerable quantity of milk. There were no signs of organic disease of internal organs; nevertheless, he had a strong suspicion that the disease had a tuberculous origin.

After the death of the animal, Mr. Rutherford afforded him the opportunity of examining the leg. The skin and subcutaneous tissues were thickened to the extent of from one to two or three inches. The external fistulous openings of the hocks corresponded to cloacæ in the joints, from the orifices of which masses of degenerated ligamentous structure protruded.

The whole of the soft structures of the fetlock joint had undergone molecular degeneration, and large portions had been cast off through the fistulous openings, the extremities of the bones entering into its composition being eroded from absorption, entirely deprived of periosteum, and absolutely dead. The ligaments of the corono-suffraginal and corono-pedal articulations, with the tendons clothing them, were undergoing gelatinous degeneration. After removal of the soft structures by boiling, extensive destruction by caries of the articular surfaces of all the tarsal bones was seen to have taken place, large quantities of new ossific matter having been thrown out round the joint and all round the upper three-fourths of the metatarsal bone, the latter being completely encased. No trace of tubercle existed in any of the diseased tissues, and he was of opinion that the affection was local in its origin.

A short discussion afterwards ensued on the subject of the paper read by Professor Walley at the previous meeting.

JOHN MCFADYEAN, *Secretary.*

## ONTARIO VETERINARY COLLEGE MEDICAL SOCIETY, TORONTO, ONTARIO.

THIS Society, which has been organised for some time in connection with the College, having for its object the discussion of subjects pertaining to the veterinary profession, held its first weekly meeting for the session of 1879-80, on the 9th of November, in the lecture-room. Sixty-seven members were enrolled. The Chairman, Professor A. Smith, President of the College, in his introductory remarks, dwelt chiefly upon the benefit to be derived from this Society, and the good feelings that had in previous sessions existed among the students in the discussion of their various subjects. The following gentlemen were then elected officers for the session:—Mr. J. P. Whitehead, Delaware, Ontario, Secretary; Mr. B. B. Page, Chicago, Illinois, Treasurer; Mr. R. Riddell, Cobourg, Ontario, Librarian; Mr. G. Dunphy, Ingersoll, Ontario, Assistant Librarian. Since that time regular weekly meetings have been held, at which an essay and two communications on diseases and treatment of domesticated animals have been read. Among the papers may be noted that of Mr. J. Loughman, Montreal, on a case of Navicula-arthritis; Mr. S. Brenton, Belleville, Ontario, on severe puncture of thoracic wall; Mr. F. Groff, Ohio, United States, on Hernia; Mr. T. Meredith, New York, United States, on amputation of tongue; Mr. J. Johnston, Teeswater, Ontario, on Parturient Apoplexy; and Mr. G. A. Dallimore, Minnes., United States, on Embolism. These and numerous other subjects were warmly discussed by the students, from which they derived great benefit, especially those of the junior class. Another feature of importance in con-

nection with this Society, and one from which the students, derive special benefit, is the remarks made by the President before the close of each meeting, upon the subjects discussed. J. P. WHITEHEAD, *Secretary.*

## THE MONTREAL VETERINARY ASSOCIATION.

THIS Association met on December 4th, the President, Dr. Osler, in the chair. Mr. J. B. Green described a very interesting case of Necrosis of the upper jaw of a horse, resulting from the fracture of a molar by an ignorant quack, in attempting to knock out the wolf teeth. Mr. Green deserves considerable credit in his treatment of the case, as it was necessary to trephine the superior maxillary at the side of the face in order to remove the diseased bone, an operation not unattended with danger; this, however, he avoided, and now the owner rejoices in the possession of a healthy animal, fully recovered from a disease that had baffled the skill of all the local empirics.

Mr. WM. MCEACHRAN read an exhaustive paper on Pulmonary Tuberculosis in cattle, going fully into the cause, symptoms, and pathology of this now unfortunately too common disease. Among the more prominent causes he cited the pernicious custom practised by many breeders, particularly of shorthorns, that of in-and-in breeding. Another cause was confining cows in poorly-ventilated stables, and giving them food that would produce a great flow of milk, but at the expense of the animal—anything, in fact, that tended to lower the vital powers would, he said, if it did not actually cause the disease, render the animal more susceptible to it, and as it was notoriously hereditary, unless proper care was taken it would soon reach such proportions as to make further trifling with it a serious mistake. One question on which he dwelt at considerable length was, whether the disease was communicable to man by eating the flesh of or drinking the milk from affected animals. The great increase of late both of Tuberculosis in cattle and the same affection in man, in its most common form of Pulmonary Phthisis or Consumption, may and probably do have some connection. That the ingestion of the actual tuberculous matter does produce Tuberculosis has been abundantly demonstrated, but whether the milk from tuberculosed animals has the same effect the writer was not prepared to decide. The evidence was not as yet sufficiently conclusive, but was enough to warrant more care than is now exercised in ascertaining the health of our food supply.

The CHAIRMAN fully agreed with Mr. McEachran as to the infectiousness of the disease, and recommended better supervision of the meat and dairies of large cities.

The SECRETARY read a letter from Dr. C. C. Lyford, describing a peculiar case in a cow that had been bitten by a dog supposed to be suffering from Rabies.

After a vote of thanks to Dr. Lyford and the essayists, the meeting adjourned.

## NEW MEMBERS OF THE ROYAL COLLEGE OF VETERINARY SURGEONS.

THE following candidates, holding the Highland and Agricultural Society's Certificate, have obtained the Diploma of the Royal College of Veterinary Surgeons —

| | |
|---|---|
| Anderson, William, Alford, Aberdeenshire ... ... ... | 1867. |
| Beattie, Peter, Bogfern, Turriff, Aberdeenshire ... ... | 1867. |
| Breakell, George, Garstang, Lancashire ... ... ... | 1854. |
| Brown, John, Roxburgh, W. Calder, Edinburgh ... ... | 1859. |

Carrie, John, Westerton, Fyvie, Aberdeenshire ... ... 1861.
Cooper, John, Fordyce, Banffshire ... ... ... ... 1871.
Connochie, John Dixon, Selkirk ... ... ... ... 1858.
Dalling, Thomas, Whiteside, Edinburgh ... ... ... 1874.
Dollar, Thomas Aitken, London ... ... ... ... 1851.
Dun, Finlay, London ... ... ... ... ... ... 1849.
Farquhar, William, Shawstonhead, Ayrshire... ... ... 1848.
Ferris, John, Brechin, S. Wales ... ... ... ... 1856.
Fingzies, James, Lochgilly, Fifeshire ... ... ... ... 1860.
Frater, William, Lesmahague, Lanarkshire ... ... ... 1864.
Fraser, Alexander, Earlsfield, Kennethmont, Aberdeenshire 1856.
Gibson, Alexander, Millbre Fyvie, Aberdeen... ... ... 1868.
Gunn, Alexander, Balloan, Beauly, Inverness-shire ... ... 1875.
Hepburn, John, Milnathort, Kinross-shire ... ... ... 1850.
Hutton, John, Kelso, Roxburghshire ... ... ... ... 1874.
Ironside, John Matthew, Milltown, Rothiemay ... ... 1872.
Kay, Thomas, Ardwick Green, Manchester ... ... ... 1871.
Lawton, Peter, Alderley, Chelford. ... ... ... ... 1862.
Macintosh, Robert, Falkirk ... ... ... ... ... 1855.
McLean Lachlan, Brooklyn, U.S. ... ... ... ... 1854.
McEwen, John, Killin, Perthshire ... ... ... ... 1867.
Margarson, Edward, Stoke Ferry, Norfolk ... ... ... 1874.
Meiklam, Robert, Drumry, E. Kilpatrick ... ... ... 1866.
Merry, Charles, Irvine ... ... ... ... ... ... 1863.
Millar, David, Alyth, Perthshire ... ... ... ... 1877.
Mitchell, Robert, Glasgow ... ... ... ... ... 1859.
Nimmo, Andrew, Linlithgow ... ... ... ... ... 1850.
Miller, William, Bradninch, Collumpton, Devon ... ... 1853.
Perry, Edward, Ibstock, Leicestershire ... ... ... 1865.
Philip, George, St. Andrews, Fife ... ... ... ... 1872.
Reid, Robert, Leith, Edinburgh ... ... ... ... 1860.
Seed, Samuel, Keighley... ... ... ... ... ... 1875.
Schofield, John, Pontefract ... ... ... ... ... 1857.
Simon, John, Forgue by Huntly ... ... ... ... 1866.
Smith, William, Tranent, Haddingtonshire ... ... ... 1852.
Summers, William, Sidmouth, Devon... ... ... ... 1866.
Tallontire, John, Skelton, Cumberland ... ... ... 1863.
Tait, George, Elgin ... ... ... ... ... ... 1848.
Wright, William, Tideswell, Derbyshire ... ... ... 1857.
Tait, Joseph, Turriff ... ... ... ... ... ... 1861.
Young, John, East Calder ... ... ... ... ... 1870.

At the meetings of the Court of Examiners of the Royal College of Veterinary Surgeons, held January 5th and 6th, the following students from the Royal Veterinary College were admitted members of the Profession :—

Mr. William Hastings Farrow ... London.
„ William John Payton Tibbatts Harborne, Birmingham.
„ Frank Taylor ... ... ... Cradley Heath, Staffordshire.
„ William John Malvern ... ... Cheltenham.
„ Frederic Gowland Rugg ... Wye, Kent.
„ Nicholson Almond ... ... Great Clacton, Colchester.
„ Henry Augustus Rumboll ... Bristol.
„ George Rees ... ... ... Llanboide, Carmarthenshire.
„ Henry Keyes ... ... ... Neale Co. Mayo.
„ James Bayes ... ... ... Kettering, Northamptonshire.

Messrs. Malvern, Rugg, Almond and Rumboll passed with great credit.

The following students of the same College passed their "Second Examination" on January 7th and 8th.

Mr. Robert Joseph Dawson.
„ Edward Harry Wand.
„ Alfred John Down.
„ Charles Samuel Hunting.
„ Edward Charles Whisken.
„ Ernest Emelius Bennett.
Mr. Edward Arthur Hollingham.
„ Edward Langford.
„ Francis William Sharp.
„ Arthur John Blake.
„ Arthur Rogerson.
„ Stephen Edward Holmans.
Mr. John Kirby Pilkington.

Messrs. Dawson, Wand, Hunting, Bennett, Hollingham, Rogerson, and Pilkington, passed with great credit.

The following students of the same College passed their "First Examination" on January 9th and 10th :—

Mr. David Martin Barry.
„ Frank Joslen.
„ Frank James Peck.
„ Frederick Henry Pinkett.
„ Edward James Sewell.
„ William Henry Bartrum.
„ William Thomson Yeates.
Mr. Phillip Turner.
„ Edward James Mellett.
„ Thomas Down.
„ Herbert Pollard.
„ Alexander Henry Waddell.
„ Joseph Henry Chaplin.
„ Charles Hartley.
Mr. Francis Morton Wallis.

Messrs. Peck, Sewell, Bartrum, Down, and Hartley, passed with great credit.

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At a meeting of the Scottish section of the Court of Examiners, held in Edinburgh, January 22nd, the following students passed their "first examination":—

*Edinburgh Veterinary College.*

Mr. James Pou.
Mr. James Geo. O'Donel.

*Edinburgh New Veterinary College.*

Mr. Wm. Malcolm Lyon.
„ Frederick Jones.
Mr. Wm. Smith King.
„ Peter Dalling.

*Glasgow Veterinary College.*

Mr. Robert Yates.

Messrs. O'Donel and Jones passed with "great credit."

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# Jurisprudence.

[We commend the following case to those members of the profession who oppose the obtainment of a penal enactment for the protection of veterinary surgeons and the public from impostors, and leave practitioners to struggle as best they can against more than one kind of "honest" competition.]

## ALLEGED BREACH OF WARRANTY.

AT the Wellingborough County Court, on Nov. 17th, Mr. Hollis, of Wellingborough, baker, brought an action against Francis Baxter, of 4, Furnace Street, Wellingborough, veterinary surgeon, to recover £19 10s., for breach of warranty on exchange of a horse, and damages sustained by him "in consequence of defendant's having fraudulently represented as sound, a good worker, and only five years old, a horse which he well knew to be unsound

and aged, and thereby obtained from him a pony worth £12, and the sum of £7 10s."—Mr. Heygate for the plaintiff, and Mr. Parker for the defendant.—Plaintiff stated that he was a young man, and assisted his mother in the business of a baker. On the 15th October last he had a pony, which he had been in the habit of driving for about three years. Defendant came to him and proposed that he should exchange his (plaintiff's) pony for one he had. Defendant said he had got a good pony, which he thought would suit him (plaintiff). Defendant said it was five years old. He asked plaintiff £9 in exchange, and eventually agreed to take £7 10s. Defendant gave a warranty to plaintiff that the pony was "sound, quiet, and a good worker." Defendant warranted the animal on the 15th, the same time as the money was paid. At the same time he said he would give plaintiff a written warranty. Plaintiff relied upon defendant's word as to the age of the pony. Took the pony away and tried him, but did not notice anything suspicious about him. His attention was called to something wrong with the pony shortly afterwards, and he had him examined on the 16th October (the next day) by Mr. B. B. Aris, a veterinary surgeon. Saw the defendant subsequently; told him that the pony was not what he represented, and read the veterinary surgeon's certificate to him.—Mr. Parker: We dispute that the warranty was given until after the sale, and that the animal is unsound now.—Plaintiff further said that on the 16th October he went to defendant's, and offered to take the £7 10s., and have his pony back. in the presence of witnesses, but defendant would not let him go.—By Mr. Parker: I am bringing the action for my mother. I am 17 years of age. I did not tell defendant I was of age. I did not tell him the business was mine. It was my mother's pony. I said I had driven him for three years, and all that was the matter with him was that he would not go occasionally. I told him the pony was not vicious, and that he did not kick. The bargain was struck in the morning, between twelve and one, and I took my pony and money, and brought his back. I had the written warranty at the time I brought the defendant's pony away.—James Brewster Cook, dairyman, Wellingborough, spoke to being present at an interview between the plaintiff and the defendant on the 16th October. He heard the plaintiff offer to take his pony back, but defendant would not hear of it, and said he would do nothing in the matter.—By Mr. Parker: Defendant stated that the pony had damaged his vehicle, and plaintiff said, with all his faults, he would like to have him back again. Defendant said he would do nothing, repeatedly. Never heard defendant say he wanted to be paid damages.—Mr. B. B. Aris, M.R.C.V.S., Wellingborough, testified to examining the animal on the 16th October. The certificate produced was the result of his examination. The mouth of the pony indicated age, and he was of opinion that he was from 12 to 14 years old. His flanks were working a good deal. He trotted him up and down the yard, and found that he was lame. The pony was suffering from Spavin on the fore hock, and was also unsound in his wind. His age was between 12 and 14 years, but he was bound to say that was more guesswork than anything else. No practised person could honestly say he believed the pony to be five years old. He estimated the value of the pony at £4 or £5.—His Honour: I think the real point is whether the pony was sound or unsound.—By Mr. Parker: The pony was trotted 40 or 50 yards. I could tell without his trotting that he was broken-winded, by the heaving of his flanks and by his respiration. I should think the disease of the hock was of twelve months' standing, or perhaps more.—Mr. Parker said the defence was mainly as to soundness or unsoundness, and he should call a disinterested veterinary surgeon to prove that the animal was sound.—His Honour: Cannot we select a third veterinary surgeon, to go with the two and examine him?—Mr. Heygate said he thought his cross-examination would put a different construction on the matter.—Mr. Parker: The warranty was

given afterwards. I say defendant did not warrant the horse. When plaintiff went back subsequently he said that, as he believed the horse to be sound, he would state in writing.—His Honour: It is a species of fraud, because it was written afterwards. I cannot allow you to stultify your client by saying that. All that you have to prove is, that the horse is "sound, quiet in harness, and a good worker." When a man goes and writes a paper, he does not write it as a sham.—Mr. Parker: It was not meant to be used in this case.—His Honour: He (defendant) wanted to assist plaintiff in trying to perpetrate a fraud upon some one else, or he perpetrated a fraud upon plaintiff himself.—Mr. Parker: Defendant believed the horse to be what he has written on the paper.—His Honour: You must stand or fall by it then.—Defendant said he was a veterinary surgeon, carrying on business at Wellingborough, and was a Fellow of the Royal College of Preceptors. He had had great experience in horses, both in England and America. On the 8th October he had the pony offered for sale by auction, but it was bought in at £15, the reserve price being £19. On the Wednesday following, defendant came to his house, and asked to see him (defendant). He saw plaintiff, who asked him whether he had sold his pony, and said that if the animal were not sold, he should like to look at him. He went to his stables, and turned the cob loose in the yard. Plaintiff said he thought it a cob that would suit him, and said he had one that would not go sometimes, but which was right in every other point. Plaintiff said he did not want to be told; he knew a good cob when he saw him. He examined the pony thoroughly, and on the Monday evening said he should like to see the pony in harness. On Tuesday he put the cob in harness, and drove to Wilby, and on the Wednesday they struck the bargain. On the previous Thursday he (defendant) drove the pony to Leicester and back. Plaintiff paid him £7 10s. for the pony, and he afterwards signed the document produced. On Thursday, the 16th, he met plaintiff in the street, and plaintiff said to him, "I do not like the looks of your cob. He is ever so old. A man told me so." Defendant replied, "I don't take notice of things like that. If you pay me the damage your cob has done—he kicked me out of the trap this morning at Bozeat—I will exchange." Plaintiff had said that his pony would not lift his leg at anything, and was perfectly quiet. There was nothing the matter with his (defendant's) pony's hocks when he sold him to plaintiff. He had seen him every day since. Had seen him galloping about the town with heavy loads. He met plaintiff coming down Wilby Road as hard as he could go. The pony was perfectly sound when he (defendant) examined him. He examined the animal that morning, and found him sound in the wind, but there was a rupture of the sheath of the back sinew, and that might be done in a minute. With about three days' rest, and proper cooling embrocations, he would be all right. Nothing would be likely to cause the injury more than putting him from light to heavy work.—By Mr. Heygate: I have been in Wellingborough five or six weeks, and come from Blaby, near Leicester. I will swear I am a member of the Royal College of Veterinary Surgeons. I do not know any Francis Baxter at Leicester. I read the *Veterinarian* sometimes. My name is Francis Baxter.—Mr. Heygate: Are you the person referred to in this number of the *Veterinarian* (produced) as Francis Baxter, junr., as to whom inquiries are made as to whether he is a member of the Royal College?—Defendant: Not that I know of. I am a member of the Royal College, that is sufficient for you.—By Mr. Heygate: I do not know Hohson or Sharp, of Leicester, veterinary surgeons,. I am a Fellow of the Royal College of Preceptors.—Mr. Heygate: What constitutes you a Fellow of that?—Defendant: By getting three certificates and passing three examinations in general knowledge.—Q.: Did you write that letter (produced)?—A.: I did.—Q.: Do you mean to say you wrote a letter of this kind? [Mr. Heygate here

explained that the letter stated that if he (Mr. Heygate) continued to circulate false reports he (defendant) would bring him up for "deformation of character."]—A.: I might have made a mistake.—Mr. Heygate said he should be glad if an adjournment were granted, in order that the truth might be arrived at.—His Honour: You are going to defame this man's character. You have done it pretty considerably already.—Mr. Heygate said the important point was, that if he was not a member of the Royal College, his evidence as to the condition of the animal would be of less value.—Defendant in further examination by Mr. Heygate, said he did not tell plaintiff that the horse which he had offered by auction had been sold to a Mr. Parker, and that the one which he had sold to him was two years younger. He did not say it was five years old.—Mr. W. R. Kitcher, veterinary surgeon, Kettering said he had practised as veterinary surgeon since 1849, but was not a member of the college. He saw the cob in dispute onthe 13th inst., when the plaintiff and the defendant were together. He examined the pony for Spavin, but did not find any, nor any symptoms of it. He felt the hocks. They were not heated, and there was no appearance of Spavin. He thought the cob perfectly sound barring a lameness behind, which he thought was temporary. It was a rupture of the sheath of the back sinew, and would be likely to be caused by heavy work. He examined the mouth, and there was no doubt that it was an aged pony. It was in good condition, with plenty of flesh. If a horse was worked with Spavin it generally got very poor.—His Honour (to Mr. Parker): You have established a sufficient case for a third veterinary surgeon to be called in.—His Honour ultimately decided that the surgeon to be called in should be Mr. Wiggins, M.R.C.V.S., Market Harborough, and that the point to be referred to him should be, whether, in his opinion, the pony was "sound, quiet, and a good worker" on the 15th of October, the damages to be according to particulars, and to be reduced to 1s. if the cob was returned to plaintiff, Mr. Wiggins to report also as to value.*

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## Obituary.

WE have to record the demise of a young member of the profession, Mr. H. A. W. Ferguson, son of Professor Ferguson of Dublin, and who only graduated in April, 1878. Mr. Ferguson was Government Veterinary Inspector at Ballina, Ireland. His death was very sudden, and in addition to his parents, he leaves a young wife to mourn his untimely end. The *Irish Times* says, "He was considered very skilful in his profession, had a large practice in an extensive district, and during his stay of over a year in Ballina was a general favourite with all who knew him."

Death has removed another graduate of the same year, Mr. Harry Lowe, of Norwich, who had been in failing health for some time, but whose premature decease must nevertheless be deplored.

Besides these losses, the profession is also deprived by death of Mr. Heaps, Preston, who graduated in 1859, and Mr. Mason, of London, who graduated in 1851; while from Melbourne, Australia, we hear of the decease of Mr. Charles Forbes, who obtained his diploma in 1841. A Melbourne paper says:—

"Mr. Forbes was well-known throughout the district, having been one of the early pioneers. After having been very successful in his gold exploits, he removed from Sandhurst to Ballarat, where he continued to reside until about

* We are informed that this M.R.C.V.S., F.R.C.P., and M.A. absconded on the conclusion of the case, taking the plaintiff's pony with him. It is also stated that Mr. Kitcher, *veterinary surgeon*, who had practised since 1849, was a few years ago a postmaster at a small village not far from Kettering.

six years ago, when he returned to this city, and has since been engaged as veterinary surgeon. He leaves a widow and two grown-up children. The deceased was a native of Aberdeen, Scotland, and fifty-nine years of age."

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## Army Veterinary Department.

*Gazette*, January 6th.

ROYAL ARTILLERY.—Veterinary Surgeon J. Gibbs retires upon temporary half-pay.

VETERINARY DEPARTMENT.—Veterinary Surgeon, First Class, M. F. Healy, from the Royal Artillery, to be Veterinary Surgeon, First Class.

WE have frequently alluded to the serious and lamentable losses among the transport animals in Afghanistan, due to mismanagement, ignorance of what is necessary in the organisation of this most essential portion of an army, but, most of all, the neglect of veterinary assistance. After almost irreparable loss has been incurred, the Indian Veterinary Department has at last been called in to aid the Government, and already the result of its intervention is most marked and salutary. The *Lahore Civil and Military Gazette* remarks on this in the following terms :—

"We are glad to hear that the Veterinary Department, on the lines of our communications in Afghanistan, is working admirably. There can be no doubt of the value of the services of the officers of this Department in the organisation and efficient maintenance of a transport train, and Sir M. Kennedy has expressed his acknowledgment of them. Arrangements are now made for the sending back of all animals unfit for work, and 400 have recently reached Peshawur from Cabul. Among these are thirty-seven elephants, eleven more having died on the march between Cabul and Gundamuck. Starvation is, in nine cases out of ten, the principal cause of the casualties among the baggage cattle, and we are exceedingly glad to understand that Government has ordered a committee to assemble, to investigate the circumstances of the extraordinary mortality which prevailed during the first campaign of the present war. The scheme of a really well-conducted transport service is a great one, and should be gone into fully, patiently, and with systematic care. In competent hands, we have no doubt that an extraordinary increase of efficiency, as well as a vast economy, could be effected. . . . . At the inspection, by Principal Veterinary Surgeon Collins, of the ponies sent up from Bombay, for transport purposes, to Jhelum, of a total number of 1,573, we are informed that 850 were pronounced to be good, 450 indifferent, 250 bad, and the remainder capable of carrying donkey-loads. Those returned as good were fit for immediate service ; as indifferent, required time to recover ; the bad included those which were quite unfit for transport purposes, either as over fifteen, or too young—under three, and those physically unable to carry loads. Over 200 animals were found to be suffering from Strangles, chiefly the young, many being yearlings. The total number of transport animals collected at Jhelum remained for some weeks about 7,000, the arrivals and departures balancing one another, at the rate of about 300 daily. The average number of sick was between 400 and 500, chiefly cases of Strangles. No Glanders appeared, though two ponies suspected to be diseased were destroyed."

Another most important step forward, is the promulgation by the Governor-General of India, of an Act to provide for the better prevention of Glanders and Farcy in that country. The strict enforcement of this Act—the necessity for which we have so urgently insisted upon—must diminish what was becoming a widespread calamity.

# Notes and News.

HYDROPHOBIA IN DUMBARTONSHIRE, AND RABIES IN ROME.—The *Lancet* says that a remarkable state of matters is recorded from the Vale of Leven. A mad dog appeared in the district about a month ago, and bit a gamekeeper, who showed symptoms of Hydrophobia three weeks afterwards, and died in the Royal Infirmary of Glasgow, after four days' illness. A cow, bitten about the same time as the man, showed also symptoms of Rabies, and has had to be shot. Within the last few days six calves on the same farm have met with a similar fate. On the 10th January a rabid dog was found secreted on board one of the Loch Lomond steamers, and, after being dislodged from its hiding-place with much difficulty, was destroyed. The sheriff of the county has wisely ordered all dogs to be confined for the next two months.

Not very long ago, when several cases of Hydrophobia occurred in Glasgow, the existence of Rabies in Scotland was very much doubted, if not altogether denied. Now the west of Scotland is becoming nearly as seriously visited as some parts of England.

Rabies has broken out in the Roman Hunt Kennels, and we learn that the whole of the hounds have had to be put down on account of the outbreak. The disease has assumed chiefly the dumb form, and the first hounds that suffered were part of sixteen couple sent out to Rome in September last, and which were believed to have carried the disease with them.

VITALITY OF BACTERIDIA.—At a meeting of the Académie des Sciences, on December 15th, M. Pasteur announced that he had ascertained, by recent experiments, that the characteristic infective organism which is the bacteridium of Splenic Disease, and the infective organism which produces the affection known as Cholera of fowls, are both capable of supporting a temperature of 40° Centigrade below zero (—40° Fahr.), without losing their faculty of multiplying in culture-fluids or their peculiar virulence as agents of infection.

BENZOATE OF SODIUM.—Professor Klebs, of Prague, announces that the benzoate of sodium is the best antiseptic in all infectious diseases. The action of it is very powerful. It is claimed that a daily dose of from thirty to fifty grammes to a full-grown man will render the poison of diphtheria inoperative. The benzoate is prepared by dissolving crystallised benzoic acid in water, neutralising at a slight heat with a solution of caustic soda, drying, and then allowing the solution to crystallise over sulphuric acid under a bell-glass. Large doses do not appear to be absolutely necessary. Good results may be obtained by the daily administration of about twelve grammes.

DISEASES DUE TO FUNGI.—In a paper on the destruction of obnoxious insects, by Professor Hagen, of Harvard, U.S.A., in which he describes some experiments that had been made by Mr. H. Burns and others, he comes to the following conclusions: 1. That the common house-fly is often killed by a fungus, and that in epizootics a large number of insects which live in the same locality are killed by the same fungus. 2. That the fungus of the house-fly acts as well as yeast for baking and brewing purposes. 3. That the application of yeast to insects produces in them a fungus which becomes fatal to the insects. 4. That, in the experiment made by Mr. J. H. Burns, all potato-beetles sprinkled with diluted yeast died from the eighth to the twelfth day, and that the fungus was found in the vessels of the wings. He admits that further experiments are necessary to find out the most convenient method of application.

CATTLE MORTALITY IN NATAL, MAURITIUS, AND CYPRUS.—Previous to and during the campaign in Zululand, about 36,000 head of cattle were employed in the colony of Natal ; of this number about 10,000 have died of over-work, insufficient food, exposure to cold and wet, unhealthiness of camps, and disease.

The *Natal Mercury* of November 21st reports that Rinderpest, after killing nearly all the oxen and cows in the island of Mauritius, except those in the more distant part of Black River, has at length gradually extended itself to that locality ; so that it may be now said to be quite general there. The deaths will probably reach 30,000. The burying of all these deceased animals is no easy task, for hundreds frequently die on one property.

In Cyprus the same disease has been prevalent, and the movement of cattle into or out of Larnaca is prohibited.

CONTAGIOUS DISEASE AMONG BEES.—*Nature* reports that a dangerous and infectious disease among bees has appeared in Italy. It is caused by a microscopical fungus, and spreads with alarming rapidity. However, winter is not a favourable season for its propagation, and salicylic acid solution is said to be an infallible remedy against the disease.

TUBERCULOSIS AND THE MILK SUPPLY.—At a meeting of the Munich Medical Society in October last, Professor Bollinger read a paper on Artificial Tuberculosis as induced by the consumption of the milk of tuberculous cows. In the course of his remarks, he endeavoured to demonstrate that the milk of such animals has a pre-eminently contagious influence, and reproduces the disease in other animals experimented on from that point of view. He believes also that such milk, even when boiled, still retains its injurious properties. Further, he maintains that beyond doubt the Tuberculosis of the human subject though not completely identical with that of the cow, is yet strictly analogous to it, and that consequently the wide prevalence of Tuberculosis in the native herds —at least 5 per cent. of which are affected—is a standing danger to the health of the community. Seeing the enormous mortality from Consumption, more especially in towns, Professor Bollinger believes it to be of the utmost importance to urge upon all classes, and particularly upon farmers, the absolute necessity of taking every possible means of stamping out the disease among cattle. Meanwhile, some measure of safety may be secured by the rigid exclusion of all diseased stock from town dairies, a measure which forms a prominent feature in the programme of the recently-established Associated Dairy at Munich, where all the cows are constantly kept under skilled veterinary surveillance, and any that may exhibit the least symptom of Tuberculosis are at once weeded out.

ON THE LIVER FLUKE.—There is scarcely any parasite so dangerous to live stock as the familiar liver fluke, *Distoma hepaticum*, commonly enough found in the livers of sheep, oxen, and other domesticated mammalia. Hundreds of thousands of sheep fall victims to it every year. It is well known that these losses are greatest after wet seasons, and that certain pastures are peculiarly dangerous, but there has hitherto been a "missing link" in the history of the development of the fluke, the filling up of which has been long sought in scientific circles, as the best means of arriving at a knowledge of how to combat the evil. The missing link is the *habitat* of the fluke, or its *ova*, immediately before its reception into the economy of its mammalian victim, and this, we are told, has now been discovered by Professor Leuckart, of Leipzig, whose name as an authority on parasites is known throughout the civilized world, in a little mud-snail—the *Limnæus minutus*. The *Limnæus*, already infested with the *ova* of the fluke, crawls from its damp breeding-place up the stems of the grass and herbage, and thence finds its

way, together with its dangerous contents, into the stomachs of the grazing live stock. Practical experiments on this point are about to be made on sheep by Professor Leuckart, in conjunction with Professor Blomeyer, the director of the Agricultural Institute at Leipzig.

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# Correspondence, etc.

## DR. PAQUELIN'S THERMO-CAUTERY.

*To the Editor of the* VETERINARY JOURNAL.

SIR,—Although Professor Pritchard recently brought this instrument before the notice of the Midland Counties Veterinary Medical Association, I think it may not be considered out of place to refer to this apparatus again, as the actual cautery is so frequently resorted to by veterinary surgeons. I should imagine that Professor Pritchard's description has scarcely been correctly reported. It is stated that the "apparatus consisted of a spirit-lamp connected by india-rubber tubing with two india-rubber balls, etc." Now, practically, these two india-rubber balls are required to propel air into the benzoline bottle, and if attached to the blowpipe fixed on the spirit-lamp, they require taking off and fixing on the benzoline bottle after the platinum point has been heated in the spirit-lamp flame; this is extremely inconvenient, for when I have tried to do it by myself I find I have to perch the point in the flame by some contrivance to keep it hot while I change the india-rubber pump from the spirit-lamp to the benzoline bottle. This is all unnecessary. My apparatus, which is the one Professor Pritchard borrowed to exhibit, has a small piece of india-rubber tubing for fitting to the spirit-lamp blowpipe, to be used with the mouth. That is unnecessary. I find myself that simply holding the end of the platinum in the still flame of the spirit-lamp, and not using the india-rubber ball pump till half a minute has elapsed, to be the quickest way of starting the process; for if air be propelled into the benzoline bottle while the point is held in the flame, it *will* require the heat of a blowpipe flame, for the platinum is rapidly cooled by the stream of cold air and benzoline vapour passing through it. The apparatus and modus operandi are as follow:—Air is propelled by squeezing an india-rubber ball, having an ingress valve, into a second ball covered with netting to prevent over-distension; this latter acts as a reservoir and renders the stream constant. From the second ball an india-rubber tube is conducted to a bottle containing a very small quantity of benzoline. The stream of air is thrown upon the surface of the benzoline, and becomes mechanically charged with benzoline vapour; the mixed gases pass out of the benzoline bottle through another tube to the handle of the operating portion of the apparatus. This latter consists of a fine tube terminating in a platinum end of whatever shape desired; this tube is covered for two fifths of its length by an ebony handle terminating in an ivory cup, and the remaining three fifths by a brass tube which joins the ivory cup and platinum point, enclosing the fine tube entering the platinum point. In the brass tube are two perforations to give exit to the gases resulting from combustion. The operating point of platinum contains an intricate coil of platinum wire. The benzoline bottle is hung to the button-hole, and the platinum point held in the still flame of the spirit-lamp for half a minute, the pumping is then commenced, and the mixed air and vapour are forced up to the heated platinum point. This causes a chemical union of the gases, with a number of minute explosions, modified by the

intricate interior coil. The heat evolved at the chemical union increases that already existing, and so the process is carried on. If fluid benzoline be allowed to run up the tube to the point, its sudden evaporation at once cools it and leaves the end choked with carbon. In damp weather the apparatus is somewhat slower to start, and I find that on a wet day in a damp shed the benzoline requires oftener changing, for moist air makes it turbid and a clear bright heat cannot be well maintained. It is necessary to keep the apparatus in a warm place to keep the rubber parts in order.

I have not the date recorded when I first used this kind of apparatus, but it was before I had obtained my diploma in 1877 ; and it was placed at my disposal by my friend, F. Purcell, Esq., M.D., of Welbeck Street. Mr. Moore introduced the apparatus to the Central Veterinary Medical Society on April 18th, 1877 ; but it is evident from the report that it was regarded more as an ingenious scientific toy than an instrument of practical utility ; no one had then, among the members of the Society, practically tested it, and it was forgotten. Mr. Moore again produced a form of the apparatus at the last meeting of the Society, and he boasted of its cheapness, having only purchased the operating portion, and fitted æther spray fittings to it ; it will, however, be found, *practically*, the instrument as sold by Messrs. Meyer and Meltzer, of 71, Great Portland Street, is the cheapest, as you have strong materials of some size, and every requisite in a neat case ; and moreover, you can operate with that confidence that nothing is "coming undone," rendering the completion of the operation no anxiety. I obtained the one recently exhibited by Professor Pritchard in September, 1877, and since then have never used any other form of actual cautery.

This form surpasses the old one by the rapidity of its action, as the cooling effect the skin produces on the plantinum is resisted by fresh heat ; the rapidity is especially noticeable in puncturing, and if care is not exercised its rapidity may lead to mischief ; it is easily used from the smoothness of the platinum, which never wastes from heat. It requires no cleaning or rubbing while in use, as an extra squeeze of the pump burns off all adherent matter. It abolishes that cruel roasting process which is, from the *size* of the old iron, necessarily inflicted on the skin contiguous to the part destroyed by the cautery, and which, when lines are drawn close together, helps to produce sloughing. *I have never had a case of sloughing after its application to the surface of the skin.* It is much less painful, as it is rapidly used and is of a clear heat, which is far less painful than a dull heat. It produces so little blemish that I think I could show about a dozen horses which require manual examination to find where it has been used. It is portable, always ready, and its value in castration is extreme as there is no necessity to get the animals near a house or a fire ; more liberties can be taken with it than the old iron, as its cauterisation is more limited and more under control, and seems to exert a happy influence over the subsequent healing ; and from the absence of a large amount of cicatrical tissue, the idea of the "permanent bandage" produced, whether mythical or not, is more likely to exist in a greater degree. Whenever possible, I use the whole of the instrument myself. This is a little awkward at first, but is easily acquired, and frequently astonishes clients by the ease which practice soon gives the operator in manipulating it ; assistants, as a rule, get immediately tired of the pumping unless they have much practice. Its cost is amply repaid by its superiority. These remarks, coming from one who was the first in this country to test practically the utility of the invention to our profession, will, I am sure, induce others to adopt a more scientific form of a useful remedy. I shall always consider mine as the cheapest instrument I ever bought.

I am, sir, faithfully yours,

London, *December*. CHARLES SHEATHER, M.R.C.V.S.

## THE ROYAL VETERINARY COLLEGE *v.* PRACTITIONERS.

*To the Editor of the* VETERINARY JOURNAL.

SIR,—I am one of "les miserables" who signed a petition, asking for a general meeting of the profession, to consider "The advisability of requesting the Governors of the Royal Veterinary College to revise their system of subscription, and to make the practice of the institution less competitive to private practitioners."

I am somewhat indifferent whether such a meeting can be legally held or not, and have always thought that the matter under discussion could be best considered by the parties immediately concerned—*i.e.*, the Governors of the College, and those weak members who fancy they have a grievance. I am, however, quite convinced that the petition is not merely the outcome of disappointed mediocrity, or of petulant envy, but is really a true expression of the feeling that we are unfairly handicapped in our struggle for bread; and that the College, which, by the public, is supposed to represent our highest professional development, exhibits itself rather more as a trading establishment, and rather less as a scientific institution, than it ought.

We claim to have a twofold grievance—a material one, that we are undersold; a sentimental one, that we are undervalued. We ask the College not to undersell us, and we also ask them to assume for themselves a higher value, that we, by comparison, may not be undervalued. We say that the College gives its subscriber more for his money than any private practitioner can possibly afford to give, and thus not only deprives some of us directly of clients, but forces many of us to charge less than equity would allow.

The system of subscription adopted by the Royal Veterinary College differs from that of any scientific institution with which I am acquainted. The two-guinea subscription is given by noblemen and gentleman in a similar sense, I take it, to that which prompts them to subscribe to a medical school and hospital. I cannot think it is merely given to obtain forty-two shillings in return. Still less do I believe that any of the better names on the long list would confess to a desire to obtain fifty shillings or its equivalent in value. If it be said that the subscribers go to the College because they think they there get better value than they can get anywhere else, I can only reply that this may be so; but that it should be remembered that the staff of a College derives some fictitious value merely from "the connection and the name," and that this depends upon the support of the profession in sending students.

I have not a word to say in disparagement of the Royal Veterinary College, still less against its staff, most of whom I hope I may still call friends, and whom all must allow are a conspicuously able group. I have no dogmatic demand to make. Any attempt at coercion would be as stupid as it would be futile. I simply ask—Cannot the College, from its undoubted eminence, afford to consider the private practitioner a little less as a rival to be competed with? Can it not curtail, without loss to itself, the enormous privileges of its subscribers? Can it not even obtain all the necessary subscribers without offering a direct return for their money? Of course, if it can be shown that these steps would entail such pecuniary loss as to interfere with the usefulness of the institution, I am out of court—we must all live, and so must the College. If the College accepted "annual subscribers" simply as contributors to a scientific institution, I believe they would retain nearly their whole list, and I am certain that many practitioners would be glad to contribute.

Your obedient servant,

Down Street, W., *January 10th*, 1880. WM. HUNTING, F.R.C.V.S.

## PRELIMINARY EXAMINATIONS AT THE ROYAL VETERINARY COLLEGE.

*To the Editor of the* VETERINARY JOURNAL.

SIR,—As a student at the above institution, may I crave space to bring this matter before the powers that be? It seems to me that Preliminary Examinations, *i.e.*, examinations conducted by the teachers prior to a student presenting himself at Red Lion Square, are unnecessary. They interfere considerably with a man's studies, taking up time which might be better spent, and inflicting on the student mind a suspense incompatible with calm application to his books. They would be rendered less necessary by having more "grinds" in the theatres; thus enabling the teachers to pick out the dull men, and devote a little more attention to their instruction; whereas at present they are only selected and put back at the end of the session. I think if the *private class* system were transferred to the class-rooms, good would come of it. I must say when I received a prospectus of the College, I read that an education was given for thirty-six guineas, nothing being said about private classes at fees amounting to twelve guineas per annum. In the City, important omissions from prospectuses sometimes come under notice, and offenders incur the displeasure of the blindfolded lady with the scales. Of course, it may be said it is optional on the part of a student to join a "private class." But what an option! The first three words in this letter will explain why I must, on this occasion, sign myself

Royal Veterinary College, *Dec. 29th*, 1879. "NEMO."

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## OUR AMERICAN COUSINS.

*To the Editor of the* VETERINARY JOURNAL.

DEAR SIR,—The pages of the January number of your *contemporary* are literally inundated with *matériel Americain*. From the pen of Mr. J. H. Steel we have a comprehensive synopsis of the present state of the veterinary profession in America, which at least demonstrates one thing, viz., the great need of an amalgamation of the various licensing and title-giving bodies into something analogous to our Royal College of Veterinary Surgeons. One is apt to get confounded with their titles, such as D.V.S., B.V.S., D.V.M., V.S.E., V.M., etc. Mr. Steel's article is in general correct, and affords the profession in this country a good idea of the state of matters in America. He is, however, incorrect in saying that Mr. J. A. Going, V.S., New York, is not an M.R.C.V.S., as he might have seen in the pages of the *Veterinarian* for December last, where he would also have discovered that Mr. C. P. Lyman, whom he styles V.S.E., is also an M.R.C.V.S. Mr. Steel will likely hear of these errors from the parties interested.

An American M.D., Mr. G. W. Bowler, V.S., treats the readers of your *contemporary* to a string of rambling remarks on the "Castrating Ecraseur," and makes light of the celebrated "Farmer Miles," and still more so of the English veterinarians who patronised him. I can well believe Dr. Bowler's assertion, that there is no great secret in using the ecraseur in castration, and that any practical man may safely use it, even although he has never previously seen it in operation. Have we not all many things to do that we never saw before?

I cannot, however, coincide with the Doctor that the ecraseur idea originated in America, neither can I credit that it is so very infallible, and so pre-eminently superior to all other methods. I believe the ecraseur has long

been used in France in castration (*vide* Peuch et Toussaint's Surgery); I am also aware that it was used for a great many years by the late Mr. Prentice, of Longford, Ireland; so that the Doctor's bombast about having inaugurated its use must fall to the ground. In like manner his assertion of its infallibility—for does not even the ubiquitous Farmer Miles allow that he—even he—loses a small percentage? and farther, that hæmorrhage will, at times, follow the ecraseur?

Mr. Gerrard, of Romford, mentions having seen two colts castrated by Miles, which bled severely, and several others that got very much swollen after the operation. Mr. Gerrard candidly says that he prefers the torsion forceps to the ecraseur, and so do I, by a long way.

The French, on the whole, don't favour castration by ecraseur, and one of their reasons for this is, that owing to the necessity of operating *very slowly* with the ecraseur—to prevent crushing and tearing the vascular cord too hurriedly, and thus causing hæmorrhage—the animal is subjected to prolonged and extreme pain; in fact, the operation is characterised as being "*très douloureuse!*" In the operation by torsion, on the other hand, however long the act of torsion may be necessary, it is not felt by the subject, owing to the isolation by the grasp of the clam on the cord.

I should say that the hæmorrhage occurring after Miles must arise from his extremely quick manner of operating. About hæmorrhage, however, he seems to care little, nonchalantly remarking "They won't die!" Now, this may be quite true, but it is very unprofessional, and utterly disagreeable.

As for "bleeding to death" from the cord, I don't think it altogether possible. A friend of mine in Oregon, U.S.A., was bothered with a four-year-old half-bred stallion, about 15½ hands, belonging to one of his neighbours. Having one day found him making friends with some young Clydesdale mares, he lassoed him, hitched him close up to a post, drew one hind leg forward to same post, and then quite coolly slit out first one and then the other testicle, *and cut both clean off without any ceremony.* Thereafter the brute was unhitched and set free. The blood was flowing in oceans, but he at once bolted off like the wind! My friend did not see him again for a fortnight, by which time he was all right and in grand spirits.

I am digressing, however, and must again return to our American *confrère*, Dr. Bowler, V.S., who, after disposing of the ecraseur, proceeds to attack "Britishers" who treat Colic with Sp. Ether, Nit. et Op. Tinct.; Rheumatism with aconite and belladonna in homœopathic doses, and themselves with whisky in allopathic doses! This part of the Doctor's letter I consider simply below notice, and I trust the parties attacked will treat it with silent contempt.

Faithfully yours,

Banff, 14*th January*, 1880. A. E. MACGILLIVRAY.

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## THE RESPONSIBILITIES OF VETERINARY SURGEONS.

*To the Editor of the* VETERINARY JOURNAL.

SIR,—The excellent paper read by you at Manchester, relative to the responsibilities of veterinary surgeons, has proved the exciting cause of some voluminous and somewhat remarkable letters, which have appeared in the "Correspondence" columns of the VETERINARY JOURNAL, and which, in my humble opinion, treat of subjects that have no special application to veterinary surgeons, *as such.* A person ignorant of the character he defames may deny that a veterinary surgeon possesses moral rectitude; but surely a member

of the profession is better informed, and need not occupy the space of your Journal by repeating such slander, as if he himself believed it to be true. And it seems equally unnecessary to disprove such assertions in *writing;* for every day's experience of the public who transact business, or otherwise associate with veterinary surgeons, affords the test by which we shall be judged. To condescend to argument for the purpose, is, to my thinking, unnecessary if not dangerous, as it may be considered that we are less confident than we really are of the result, should our reputation rest upon the test of experience alone, referred to above. It is very easy, besides, in writing, to convey wrong impressions. For instance, one writer, after ably proving that veterinary surgeons are deservedly held in esteem by the public, proceeds to give advice as to how veterinary surgeons should act in law cases. He writes, "They should, when they are in the right, stand by each other." An enemy might well say, "What need is there to tell honest and independent men to do that? because, in the case supposed, to do right they must of necessity stand by each other." The natural instincts of the honourable man would demand that he should do and say what is right, for its own sake, and not simply for the sake of standing by his professional brethren. I admit that to be united in opinion is very desirable, but we must not put the cart before the horse in our principle of ethics, or a watchful public will soon detect the flaw in our armour of morality, and be very ready to suspect that its foundation is no deeper than selfish expendiency, instead of the solid rock of right and truth, as evidenced in daily life in all our dealings with our fellow-man. I feel sure all your correspondents, for whom I feel great respect, will pardon the above remarks. I remain, dear sir, yours faithfully,

*January 2nd.* "A."

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## ON DISEASE OF THE MUSCLES OF THE HIND LEGS OF COWS, FOLLOWING PARTURIENT APOPLEXY.

*To the Editor of the* VETERINARY JOURNAL.

DEAR MR. EDITOR,—On again perusing your valuable Journal this evening (no professional brother enjoys cogitating over its contents more than I do, greatly to my own interest it frequently proves), allow me to make a few practical remarks on the disease of the muscles of the hind legs of cows after calving. I have successfully used, during the past twenty years, the galvanic battery, and where within a reasonable distance from home, give two strong applications a day. Where so done, I always had my patient up in three days, and when at a distance too long to traverse twice in the day, have used it only once for fifteen minutes at a time. I never had a case in my humble experience that was not able to perambulate its byre or box on the fifth day, so would urgently advise your correspondent "Cyclop" to adopt this plain and simple remedy, which, I can honestly assert, has not failed in my hard-working country practice for over twenty years, since I adopted this mode of treatment.

Believe me, faithfully yours,

Kingston-on-Thames, *Dec. 6th*, 1879. WILLIAM FURNIVALL.

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## AN UNWARRANTABLE REPROACH.

*To the Editor of the* VETERINARY JOURNAL.

SIR,—At a recent meeting of the Scottish Metropolitan Veterinary Medical Association, a committee was appointed to issue circulars to the holders of the Highland and Agricultural Society's veterinary certificate, urging them

to obtain the diploma of the Royal College of Veterinary Surgeons. One of these circulars, intended for Mr. George Simpson of Liverpool, who obtained the certificate in 1842, was, by mistake, addressed Seel Street, and so reached a destination which is explained by the following letter :—

70, 72, and 74, Seel Street, Liverpool,
*January 1st*, 1880.

The *Committee* of the Scottish Metropolitan Veterinary Medical Association.

GENTLEMEN,—I beg to return the enclosed circular, as my name is not George. If you will take the trouble to look over the *regestar*, you will find that I obtained, by examination, the diploma of the Royal College of Veterinary Surgeons in the year 1866.

I am proud to state that it is seldom the pupils of the Royal Veterinary College, London, find it necessary to purchase their diplomas.

I am, gentlemen, yours truly,
THOMAS SIMPSON.

One hears a good deal at present about the disunited state of our profession, and also much complaint that we are not accorded that position in public opinion which, as a scientific body, we deserve. The foregoing letter makes it evident that the desire for unity is certainly not universal, and on receipt of it I could not help thinking that the public estimate of some members of the profession must be very low indeed to warrant any such complaint in their case.

Mr. Simpson might, with less irrelevancy than is displayed in the last sentence of his letter, have informed us what institution had the honour of superintending his general education.

I commiserate the schools which are denied the pride of claiming Mr. Simpson as an *alumnus*. I am, sir, yours, etc.,

Edinburgh, *January 9th*. J. MCFADYEAN.

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## A LAPSUS PLUMÆ.

*To the Editor of the* VETERINARY JOURNAL.

SIR,—As author of the paper on "Indian Remount Depôts," in the *Veterinarian* for December last, allow me to apologise to your correspondent for the obvious *lapsus plumæ* he complains of at page 864. I should have thought, however, such pleasant criticism would be considered rather an intrusion on the valuable space of a scientific journal—it might, perhaps, be admissible in the pages of *Punch*.

Yours obediently,
CHAS. STEEL, V.S.,
Brighton, *January 8th*. 16*th Lancers*.

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## COMMENTS.

AT the discussion on Animal Vaccination, which took place in London recently, some extraordinary notions were ventilated with regard to Variola in animals, and animal diseases in general. Veterinary pathologists will be rather startled to hear that there are only two kinds of Variola—human and ovine ; that Vaccinia is merely human Variola modified by the cow, though all attempts at producing the former by inoculation with the virus of the latter have failed in latter days, but was easily accomplished formerly ; that Chauveau is a foreigner, and therefore untrustworthy; that horse-pox has only been observed by incompetent foreigners ; and that only those present at the discussion knew everything relating to the variolous diseases of animals. The most amusing speaker

was perhaps Dr. Crisp, who pretended to a most intimate acquaintance with animal disorders, made most astounding revelations with regard to the transmissibility of a host of maladies—Glanders among them—from *cattle* to mankind, and spoke of *entozootic asthma* of bovines as likely to be communicable to man! Will anybody tell us what *entozootic asthma* of the cow really is? The doctors sadly need some one among them to inform them as to disease in animals, and especially Variola. Foreigners, of course, would have to be excluded, and native evidence alone admitted; though little or nothing is known of foreigners and their labours, yet as ignorance of these appears to be bliss, the folly of being enlightened by their means is obvious.

## ANSWERS TO CORRESPONDENTS.

V. S. AMBLESIDE inquires if we ever knew of an instance in which a bitch, suffering from the dumb form of Rabies, showed signs of œstrum at the same time. He attended one recently which exhibited the usual symptoms of Rabies, but the vulva was congested, and she frequently licked the part and then commenced howling. The symptoms of Rabies may certainly appear while a bitch is in "heat," the development of the malady offering no impediment to the evolution of the œstral process, as it offers no hindrance to the course of pregnancy.

JUNIUS.—We cannot give any information as to the number of unqualified men who adopt the title of Veterinary Surgeon in this country; but it must be large.

ARMY VETERINARY SURGEON.—We certainly think all Army Veterinary Surgeons should avail themselves of their privilege, and vote for members of Council who will represent their interests, as well as those of the profession generally. It is not necessary to vote for six persons, and if it is desired to return only one or two in particular, then vote only for these. Voting papers may be obtained of the Secretary, R.C.V.S.

## Communications, Books, Journals, etc., Received.

COMMUNICATIONS have been received from J. McFadyean, Edinburgh; J. C. Dwyer, Royal Horse Artillery, Woolwich; J. Moore, London; G. Evans, Army Inspector, Simla; "Nemo"; "A Candid Student"; "A"; A. E. Queripel, Royal Artillery, Rawel Pinde; F. F. Collins, Principal Veterinary Surgeon, Simla; C. Steel, 16th Lancers; C. Clayton, Royal Artillery, Kandahar, Afghanistan; S. Locke, Manchester; G. A. Banham, London; "V. S."; J. P. Whitehead, Ontario; J. Mills, Royal Artillery; T. Barker, London; T. Walley, Edinburgh; R. Sowerby, Hull; J. McFadyean, Edinburgh; J. Wilson, Nantwich; A. E. Macgillivray, Banff; R. Keele, Ealing; W. Hunting, London; G. Mitchell, Melbourne; "Army Veterinary Surgeon."

BOOKS AND PAMPHLETS: Cruelty to Animals, Acts of Parliament and Suggestions; *F. A. Zürn*, Massenerkrankung von Schafen, etc; *O. Bollinger*, Ueber Animal Vaccination; Dritter Jahresbericht, etc., über de Verbreitung Ansteckenden Thierkrankheiten in Preussen; *A. Zündel*, Die Druse der Jungen Pferde; Investigation of the Diseases of Swine and Infectious and Contagious Diseases among Animals in America.

JOURNALS, ETC.: *Annales de Méd. Vétérinaire; Nature; Der Thierarzt; Lancet; Recueil de Méd. Vétérinaire; L'Echo Vétérinaire; Journal of the National Agricultural Society of Victoria; Annales de Méd. Vétérinaire; Der Thierfreunde; Live Stock Journal; Archives Vétérinaire; Deutsche Zeitschrift für Thiermedicin; Wochenschrift für Thierheilkunde und Viehzucht; Lancet; Medical Press and Circular; Nature; Microscopical Journal; American Veterinary Review.*

NEWSPAPERS: *Montreal Gazette; Roscommon Herald; Globe; Lahore Civil ana Military Gazette; Paper and Print; Roscommon Messenger; Irish Times; Roscommon and Leitrim Gazette; Scotsman.*

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THE VETERINARY JOURNAL
AND
Annals of Comparative Pathology.

MARCH, 1880.

## CLINICAL NOTES OF CASES OF TETANUS.

BY W. A. TAYLOR, F.R.C.V.S., MANCHESTER.

IT is with the hope that the following notes may prove of interest to some members of the profession, that I venture to record them.

### CASE I.

*Traumatic.*—Subject, a brown half-bred gelding. Admitted an in-patient on the evening of the 29th October, 1879.

This horse had received a skin wound immediately above the left eye, some little time before he was noticed by the attendant to be incapable of properly masticating his food. The wound was so slight that little notice was taken of it, and no treatment adopted. On the day of admission, the horse was found to present the usual symptoms of a tetanic patient. His jaws, upon force being applied, could be separated to the extent of admitting a finger. There was great rigidity of the muscles of the neck, back, loins, and quarters. He was placed in a darkened loose-box, and tied up by the head, so that he could not lie down. At 7 p.m., Conia, grs. x., were injected subcutaneously. The wound was dressed with Ext. Belladon., and his diet was ordered to consist of gruel and bran mixed, with milk and water as a drink—some of which he was able to swallow.

*October 30th.*—11.30 a.m. Rather more elevation of tail; other symptoms much as yesterday. Passed fæces once; had partaken of gruel and bran. Injected hypodermically Conia,

grs. xv.; Ext. Belladon. again applied to wound. 7 p.m. Lateral movement of lower jaw more extensive; other symptoms unchanged; still takes food. Injected Conia, grs. xv.

*October 31st.*—12 noon. Movement of neck rather freer; defæcated twice. Injected Conia, grs. xv. 6 p.m. Able to lower head more; pupils dilated. Drank two quarts of gruel. Again injected Conia as before.

*November 1st.*—1 p.m. Movements of jaw, trunk, and limbs less restricted; passed fæces four times. Injected Conia, grs. xv. Ordered a little stewed hay to be given. 6.30 p.m. Muscles a little more relaxed; passed fæces once; had eaten a little stewed hay. Injected Conia, grs. x.

*November 2nd.*—9.30 a.m. Taken all food given; pulse 48 between paroxysms; sweating a little at flanks; movement quite as free as yesterday, but more general restlessness displayed; defæcated once. Injected Conia, grs. viii. 7.40 p.m. Still more restless, as if anxious to lie down; perspiring freely on neck, behind shoulders, and at flanks; pulse 50; passed fæces once since last seen. Resolved to change treatment, and gave, in a little water to drink, Morph. Acet., grs. v., *cum* Atrop. Sulph., gr. i.

*November 3rd.*—11.15 a.m. Continues to partake of food; defæcated once; sweating decreased; pulse 56. Administered Morphia, grs. v., *c.* Atropia, gr. ss. 6.45 p.m. No fæces; sweating a little at flanks only; able to get his head much lower; breathing still hurried, as if tetanic spasm was affecting chiefly the muscles of respiration; pulse 48. Gave medicine as in morning.

*November 4th.*—10.30 a.m. Still perspiring a little at flanks; no dung; continues to take food; pulse 56. Prescribed Morphia *et* Atropia as yesterday. 7.45 p.m. No fæces; patches of perspiration at flanks; pulse 60. Exhibited Morph. *et* Atrop. as before.

*November 5th.*—Noon. Not passed any fæces; still continues to eat; sweating only a little at flanks; pulse 60. Determined to make a further change of treatment. Prescribed Atropia, gr. ss., Strychrine, gr. i. (dissolved), to be added to a little drinking-water. Same dose was given in the evening.

*November 6th.*—Symptoms improved; defæcated once in the

night, and again during the day; perspiration entirely ceased; muscles of mastication continue somewhat rigid; moves with greater freedom; pulse 48. Strychnine, gr. i., *c.* Atropia, gr. ss., were administered night and morning.

Under this treatment he continued to progress towards recovery, and on the 10th he was turned loose in the box. On the 13th the dose of Strychnine was reduced to half a grain, and from the 15th the medicine was given once daily. He was discovered lying down for the first time on the 16th. Subsequently, restorative doses of Nux Vom. Pulv. were given, mixed with the food, and he was discharged perfectly recovered, on the 28th November.

Co-existent with the tetanic attack there was ophthalmia of the left eye, which set in two or three days after the patient's admission. To what could this condition be ascribed? Could the absorption of the Ext. Belladon. which was applied to the wound immediately above the eye, have been the exciting cause? On the authority of Dr. J. Harley,* it is recorded that Belladonna has been known to cause ophthalmia. I am disinclined to believe that it was so in this instance, and attribute the cause to some remote injury to the optic nerve or internal structures of the eye at the time the wound was received. However, be the cause what it may, the ophthalmia steadily progressed, despite topical remedies, until the whole of the internal structures of the eye became more or less involved, ulceration with rupture of the cornea ensuing; thus permitting the escape of the aqueous humour, which was followed by collapse of the organ and consequent entire loss of vision. The right eye remained perfectly healthy.

In this case, all attempts to ascertain the internal temperature occasioned such severe paroxysms, that they were ultimately discontinued.

### Case II.

*Sub-acute idiopathic.*—On the 22nd October, 1878, my attention was called to a half-bred bay mare, on account of her walking very stiffly. On examination I found that she was suffering from Opisthotonos, with slight trismus. Aloes Barb., ʒvi., were

* Ringer's "Therapeutics," page 365.

immediately administered; she was placed in a darkened loose-box on sawdust, and her shoes were taken off. Her diet was ordered to consist of gruel and bran, with milk and water to drink.

On visiting her next day, I found all the symptoms more fully developed. She had, however, been able to partake of the food given her, and the acts of defæcation and micturition had been performed satisfactorily, though not so frequently as in health. Internal temperature 100·2° F.

24*th.*—Trismus more severe; other symptoms much the same as on previous day. Temperature 100·4°. Determined to try Amyl Nitrite, as this agent had been promulgated by some members of the profession as of value in the treatment of Tetanus, and accordingly I injected hypodermically mms. xxx.

25*th.*—Rather more rigidity of muscles of neck and back; continues to take food; digestive process proceeding tolerably well. Temperature 101·1°. Injected Amyl, mms. xl.

26*th.*—Much the same. Thermometer registered 101°. Again injected Amyl, mms. xl.

27*th.*—Pulse hard and somewhat accelerated. Temperature 100·3°. Little or no change in other symptoms.

28*th.*—Still partaking of food; defæcations not so frequent as on previous days. Temperature 101·1°. Not seeing any beneficial action, but rather the reverse, from the Amyl Nitrite, I almost decided to cease giving it.

29*th.*—Temperature 100·3°. No improvement in other symptoms; discontinued the administration of Amyl. Prescribed Morph. Acet., grs. v., *cum* Atrop. Sulph., gr. ss., to be given in a little drinking-water night and morning.

31*st.*—A little improvement in symptoms. Temperature 99·1°. Continued treatment.

*November 2nd.*—Temperature 99°. Considerably better. Continued treatment.

4*th.*—Still improving. Temperature 99·3°. Treatment continued.

7*th.*—Much improvement. Prescribed Strychnine, grs. iss., *cum* Atrop. Sulph., gr. ss., to be given once a day.

11*th.*—A little stiffness on walking was the only symptom ob-

servable. Ordered walking exercise. The dose of Strychnia and Atropia was from this date gradually diminished until the 22nd, when further exhibition of medicine was considered unnecessary.

### Case III.

*Acute idiopathic.*—Subject, a brown draught-mare. Saw her for the first time on 18th February, 1878. At 12.30 p.m. found that she could open her mouth to the extent of about two inches; pulse 48; Opisthotonos very apparent. This animal, when in health, was of a highly nervous temperament, and disposed to kick. An attempt to take the temperature *per rectum* caused such severe paroxysms that furthur attempts were not made. She was placed loosely in slings in a darkened loose-box. Injected subcutaneously Atropia, gr. i., and gave instructions for Chloral Hydrate, ʒj., to be added to her drinking-water twice a day. 10.45 p.m. Eyelids drooping; dilatation of nostrils less; able to open mouth three inches; pulse 52.

In the evening partook of very little food and no water, consequently no Choral Hyd. given. Injected Atropia, grs. ii.

19*th.*—1 p.m. Pulse 72; jaws could be separated two inches; dilatation of pupil very great; breathing much accelerated; mucous membranes highly injected; perspiring on neck under the mane; peristaltic action of bowels ceased; tympanitic condition of abdomen; has taken no food. Injected Atropia, grs. ii. 10.45 p.m. Pulse 78; tetanic spasms excessive; perspiration general and great; altogether much worse.

20*th.*—1.45 p.m. Sweating profusely; rigidity of muscles intense; tympany increased; could open mouth one inch; no fæces. Injected Atropia, grs. ii. 8.15 p.m. Died.

In March, 1877, I had a bay agricultural mare suffering from the sub-acute traumatic form; and in February, 1876, an ass, the subject of an acute traumatic attack. Both recovered under treatment by hypodermic injections of Conia, followed by restorative doses of Nux Vom. Pulv.

# GLANDERS AND OZŒNA, FARCY AND PYÆMIA.

BY ROBERT WARD, F.R.C.V.S.

*(Continued from page 383, vol. ix.)*

ON the nature and pathology of Glanders and Farcy much has been written at various times; but with all the research of many eminent pathologists, nothing new has been advanced either in its natural history or indications—physical and therapeutic.

We, therefore, define it to be a disease peculiar to the horse, of a *specific* poisonous character, highly contagious, and readily communicated to man by inoculation. Thus far our present knowledge extends; but it may be in the future, after the barrier between our profession and the sister science has been broken down, that a sound study of comparative pathology may develop itself, and remove the mist which covers so many contagious and infectious diseases among our patients.

This disease, like many others of a serious nature, was for a long time entirely overlooked, and considered to be of a purely local character; hence many attempts were made to find a *remedy*, while its nature was neglected. So that from the days of Hippocrates to the present time almost, but little advance has been made in its etiology. It was thought incommunicable to man; and even at this moment its morbific influence on the human subject is questioned. It appears, however, that Dr. Elliotson has the credit, I believe, of first clearly demonstrating the disease in man, under the term "Equina," and it has been again and again demonstrated; those who may wish to study the phases of the disease as affecting the human subject, I refer to "Holmes's System of Surgery" (2nd edit., vol. i.; Gen. Pathology, pp. 699 *et seq.;* article by A. Polland).

During the present year several deaths have occurred, so that really the lives of human beings are dependent on the veterinary surgeon's correct diagnosis—a most important and serious responsibility.

Ozœna* is the medical name given to Nasal Gleet due to local causes, and is intended as a distinct term for such affection. It should, therefore, never be used by us in connection with cases

* Greek, Ὀζη, a stench, from the same root as Ozone.

of Nasal Gleet arising from Glanders, for this is decidedly likely to mislead. In this affection we have a foul discharge of purulent matter from the nostrils, generally most offensive, and accompanied with a diseased condition of the bony tissues, as I have explained in the case of the brown blood-cob belonging to the medical firm—this was a case of Ozœna; or it may arise from a chronic inflammatory condition of the lining membrane of the sinuses and nasal passages, as a sequal to protracted catarrhal affections, yielding certain diagnostic signs—for we usually find an enlarged condition of the structures over the seat of disease; and if from dental origin, a careful investigation will lead us to its seat. On this subject the valuable remarks of Professor Varnell are so explicit, that I will not attempt to recapitulate them.

Too much care cannot be bestowed on the digital examination of the facial bones and frontal—lachrymal and maxillary—sinuses, together with percussion; and should we imagine that we have detected the seat of mischief, a small, round-pointed awl may be used at the place as an exploratory instrument. The appearance of the eye on the side affected is also an excellent criterion in our diagnosis.

Although the discharge may in character resemble that of Glanders, still experience will detect that it is not of the same sanguineous, gluey-like adhesive nature, and the pituitary or Schneiderian membrane may show a somewhat characteristic appearance; the ulcer-like sores do not exhibit the ragged chancrous aspect of the true ulcer of Glanders.

Pyæmia, Pyohæmia (Πύον, *pus*; αἷμα, *blood*) are synonymous terms used in pathology to express an abnormal condition of the blood, wherein we have floating among the proper blood-discs pus-globules, a condition frequently resulting from wounds when assuming an unhealthy character after surgical operations; to which surfaces putrid animal or vegetable matter may accidentally come in contact; or it may develop through the poison becoming absorbed through the lungs, or from the alimentary canal, and also follows irregular Strangles.

Four theories have been advanced in explanation of the pathology of this disease, but as my object is to point out

diagnostic symptoms alone, I will not enter upon their discussion, a reference to them being so accessible in our modern text-books.

In this affection the primary symptoms may much resemble an attack of Farcy; but it rarely happens that, in country practice in particular, we are consulted during the existence of these symptoms—the one disease or the other has developed itself markedly on our arrival.

In 1867 I was requested to visit a horse at a large farm. The animal was reported to be labouring under an attack of Farcy, and was very ill. The usual attendant, a country farrier, a respectable man, and the village surgeon had consulted together, and the result of the said consultation was the above report. The farmer said that some twenty years before he had Glanders and Farcy in his stables, and the disease stayed with him some five years—until, in fact, he pulled the old stabling down, and erected new. His sad remembrances made him most anxious about the case. I entered the stable, a well-built brick and slate building, well to look at outside—but inside! Well, there was of dust, dirt, and cobwebs, no end; the floor, of puddled chalk, in deep holes, holding the aqueous and solid excreta of the horses. The only attempt at drainage appeared to be a channel or gutter cut in the surface, but only to be traced here and there in outline; ventilation and light had been omitted of course. There was the patient, standing at the far end, breathing hard and perspiring. When I approached he appeared greatly afraid I should touch him. I found considerable swelling in the groin on the left side, the veins much inflamed, and several pustules studded around the upper part of the hind extremity; the leg was enlarged; under the abdomen, and between the fore extremities were also swellings and corded blood-vessels, with here and there a nodulated pustular-like body forming. The animal could not move without great effort; however, I determined to have the patient transferred to the bull-pen, a large airy box at the end of the building, and whilst this was being done, I asked the history of the patient, which was a fine five-year-old bay cart-horse. It appeared the animal had had a very slight attack of Strangles about a year before, which did not come on as in the other colts, and there was but little discharge from the abscess in the

submaxillary space. The farmer, however, thought the animal was so robust—he had thrown the Strangles off very easily. Everything went well with the horse till mid-winter, when he seemed to go amiss; the head carter considered he had taken a chill, and he was nursed and had some powders. So things went on till he injured himself during the frost, being "roughed," and became very lame on the same leg. The appearance of the pustules formed and forming, the swelling and general symptoms did not to my mind, when I ordered the patient to be moved, lead me to diagnose it as Farcy; for the pustules had not the character of true Farcy buds, and those forming here and there had not the button-like swelling of true Farcy. From the history of the case and these symptoms, I gave my opinion that it was a case of blood-poisoning; that the blood was impure from the suppression of Strangles; and that the exciting cause of its present development was the injury.

Being a valuable young horse, the farmer wished me to treat the case, and he promised to see every order faithfully observed. The animal had lost appetite and spirits. He had already been pretty well "physicked" I found; so I ordered eggs, beef-tea, and stout, much to the farmer's astonishment—the leg to be fomented in a leg-bucket continuously; and I prescribed mineral and vegetable tonics, lanced the ripe pustules, had the box well littered and quilted. I visited the animal every other day for some time; on the fourth day I found a large abscess had formed inside the thigh, which I carefully opened, giving exit to a large quantity of pus: having allowed all I could to escape, I covered some tow with Ung. digest., and inserted it, leaving ointment and tow for daily dressings, with a syringe and carbolic lotion for cleansing the parts daily. For several days it was astonishing the amount of pus that came from the abscess. Finding the discharge so copious, I heated the budding iron—I am a great advocate for the iron as a cautery—and seared up every pustule I could find; this I did effectually.

The patient was discharged to work at the end of three months, gradually recovered health and condition, and was sold after the farmer's death—some three years since—as the best horse on the farm, for more than sixty guineas.

In 1871, whilst attending stock at Mr. E. R.'s, of D. F., the bailiff directed my attention to a pair of nag fillies with immense hard swellings under and around the lower jaw. The pair looked very poor and unthrifty; they had been running at grass in water-meadows. I requested him to tell his employer that the animals had an irregular development of Strangles upon them, and that they should be well housed, fed, and treated, to assist nature, or evil consequences would in all probability ensue at some distant date. I heard no more of the animals till the following spring, when I was requested one Sunday morning to make a long journey to see them. One I found dead on my arrival; the *post-mortem* inspection revealed a large abscess in the abdominal cavity, containing quite half-a-gallon of pus, and characteristic evidence of Phlebitis or Pyæmia.

The other animal was in a most deplorable state. It appeared, however, in her case there had been some discharge from the abscess under the jaw. Blistering, setoning, tonics, stimulants, dietaries of all kinds, with much care and attention, did at last restore this animal to apparently fair health. She was a source of trouble, however, being easily fagged, and at last came under treatment with Laminitis. She so far recovered as to be able to do light work, but I looked on her always as a patient elect for development of Phlebitis, Pyæmia, Pyohæmia, Ichoræmia, or Septicæmia.

It is accepted at this present day that Glanders and Farcy are one and the same disease, and that they are due to a *specific* poison. If this be so, and the disease Pyæmia is correctly described as a septic animal poison, or due to the infiltration of pus-corpuscle into the blood, surely it cannot be right for us to designate Farcy Pyæmia, or *vice versâ*.

Therefore it behoves us to learn the general history of our case, and compare symptoms carefully ere we come to a conclusion, should our diagnosis somewhat baffle us.

The same observations apply in cases of Chronic Nasal Gleet or Ozœna, which, primarily at all events, is a local disease, and not of a specific systemic origin like Glanders.

The modern veterinarian and student have before them the latest researches of English and foreign authorities in those two

excellent works—Williams's "Principles and Practice of Veterinary Medicine," and Fleming's "Manual of Veterinary Sanitary Science and Police." The former devotes some twelve pages to the subject of Glanders, and the latter has some seventy-five pages on the same subject. Mr. Fleming's is, without exception, the most comprehensive natural history of the disease, so far as its nature, diagnosis, and every phase of these affections is concerned. Everything pertaining to Glanders is so clearly exhibited in this work, that it would be supererogatory to enter upon the subject in the pages of the Journal.

Moreover, there is in the pages of the latter the excellent essay read before the Midland Counties Veterinary Medical Association on January 11th, 1876, by Mr. Fleming, to be found in vol. ii. No. ix., pp. 189 *et seq.*, and which should be most attentively read and considered by the student.

The prevalence of this direful disease in England at the present time—and it appears in India also from the report in the December Journal—makes the subject of grave importance. My object has been to offer such suggestions on its diagnosis as occur to me on reading over my "case-diary," and so to excite careful investigation; thus preventing the grave errors in diagnosis which have been reported in the daily papers, and which are so damaging to the profession, as well as to lead the students to apply themselves to clinics and Mr. Atkinson's field of observation.

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## HEPATIC ABSCESS IN THE HORSE.

BY J. A. NUNN, M.R.C.V.S., ROYAL ARTILLERY, JELLALABAD, AFGHANISTAN.

I SEND the following account of a case of Hepatic Abscess which recently came under my notice. On marching into Jellalabad, on the evening of the 16th of October, I was requested by an officer on General Gough's staff to look at one of his chargers. On inspection I discovered that the animal was suffering from congestion of the liver, with acute Laminitis of all four feet. These conditions I treated by removing the shoes, having poultices applied to the feet, administering fever medicines, and, in

short, all the usual remedies. The animal was a grey Arab stallion, rising six years old, and had been marched from Jhelum to Peshawur—179 miles. He was ridden by his owner from Basawul to Barakhab—twelve miles—on the 10th, when he was noticed to be sluggish and dull, and his dung very offensive. On the 11th he was placed under the care of the "Salootrie," of the Guides Cavalry, who, from what I can make out, treated him with repeated small doses of Tartar Emetic and Calomel; but on this point I cannot be quite certain, as my informant was a Boothan who spoke but very little Hindustani. On the 17th inst. I was requested again to visit the animal, about four p.m., as he had suddenly become very much worse. He was then showing symptoms of abdominal pain; persistently maintaining the recumbent position, groaning, and grinding the teeth. The pulse was seventy-two per minute; bowels relaxed, fæces a bright yellow colour, and having a most offensive odour. On making the horse rise, in order to receive some medicine, I observed a large patch of perspiration on the left side of the body, just behind the last false rib. The animal was very weak and exhausted. I therefore administered an anodyne draught, with half-a-pint of whisky, and had the abdomen fomented. On again visiting the patient at six p.m., he appeared to be free from pain, but was evidently fast sinking. He died at eleven p.m. the same date. *Post-mortem* examination twelve hours after death. On opening the abdomen, a quantity of thick-looking fluid escaped. All the organs were healthy except the liver, which was much congested, and in the *left* lobe of which was the cavity of a recently-burst abscess, which would probably have held a pint of pus. The abdominal cavity contained a quantity of pus mingled with serum. The peritoneum, anteriorly, was somewhat congested. No other lesion could be observed.

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## A FŒTAL MONSTROSITY.

BY J. WILSON, M.R.C.V.S., NANTWICH.

ON Sunday afternoon, October 19th, I was requested to attend a valuable Alderney cow, the property of Wilbraham Tollemache, Esq., of Dorfold Hall. Upon my arrival I found her standing

and straining severely. I was told that she had been attempting to calf since the morning, that the usual "waters" had been discharged early in the forenoon, but that as yet no portion of the calf had been observed by any of the attendants. Upon making a manual exploration, I found that the hind quarters of the fœtus presented, and that it was lying upon its back, with one hind foot directed towards the loins of the cow, while the other was, so to speak, well down in the abdominal cavity. Upon closer examination, I found that the ossa calces of the hocks pointed towards the anterior portion of the uterus, and as no head was to be discovered, I came to the conclusion I had got a malformed fœtus to deal with, and resolved to extract by the hind quarters.

Having, with very little difficulty, succeeded in cording that foot which pointed towards the loins, I next endeavoured to secure the other; but this I found was not to be so easily accomplished, and in consequence of the twisted position of the hocks, and other abnormalities which afterwards showed themselves, I found I was unable to seize it. After making several unsuccessful attempts to do so, I resolved to divide the limb I had already got; and directed the attendant to pull steadily at the cord, in order to bring the leg as well forward as possible. But no sooner had the foot made its appearance, than a large portion of intestine was protruded from the vulva of the cow, and judge of my surprise upon finding that the whole limb, from the hock upwards, was enveloped in an intestinal covering. This at first caused me some alarm, but having satisfied myself that the presence of the intestines was not the result of a rupture of the uterus, I proceeded to disentangle them from the limb, after which I quartered the leg at the hip joint, and removed it in the ordinary manner. Having got rid of this limb, I was now in a more favourable position to secure the other. After several attempts, I succeeded in passing a cord round the hock, slipping it well down towards the fetlock joint. I then directed the attendant to put gentle traction upon the cord; this, as will be observed, produced complete *flexion* of the hock joint. In an ordinary breech presentation it would have caused complete *extension* of that joint. In this position the leg was brought

well forward into the passage, and by a steady pull at a second cord which was fastened to the flexed hock, delivery was effected immediately.

The fœtus now presented the following abnormalities, which fully accounted for the strange and unnatural presentation. There was complete curvature of the spine; the calf, so to speak, was folded upon itself, from right to left, the hind quarters lying immediately behind the left shoulder, and the points of the hocks inclining toward the head.

The *thorax and abdomen*.—Upon the left side the skin covered the thoracic and abdominal cavities, but the right side was devoid of any cutaneous covering whatever.

The *heart* was placed outside the ribs and pectoral muscles, upon the right side of the chest, and was quite destitute of any covering; it appeared to be attached to the chest by its blood-vessels.

The *intestines* were outside the skin, to which they appeared to be attached by cellular tissue.

No examination of the thorax, etc., was made, but the specimen was forwarded to the Brown Institution.

The cow had gone about three weeks over the usual time of pregnancy.

[The monstrosity kindly forwarded by our correspondent was exhibited at a meeting of the Central Veterinary Medical Society, and inspected with considerable interest. It proved to be a *Celosomian* monstrosity, or, if we adopt Gurlt's classification, an example of the *Schistocormus* order of monstrosities (*see* "Veterinary Obstetrics," p. 394). It was peculiar, however, from its being a specimen of not only *Schistocormus fissiventralis* but also *fissisternalis*. These are the cases which often startle and baffle the young practitioner, and for the occurrence of which he should be prepared.]

## EXTRAORDINARY CASE OF SUPERFŒTATION.

BY RICHMOND KEELE, ESQ., HANGER HILL, EALING.

[The following extraordinary case of what must be considered "Superfœtation," was sent to us by a gentleman of great experience among cattle, whose paper on "Rinderpest in China" appeared in an early volume of the Journal. We can find nothing in veterinary literature to equal the case he so circumstantially describes.]

In the first place, let me recall myself to your recollection. Some three years or so ago, I wrote to you in reference to the existence of Rinderpest in China; that, however, is not my present topic, but as a remarkable event has happened in my herd of cattle, I thought it might interest you, and perhaps be of sufficient importance for insertion in any future edition of your "Veterinary Obstetrics." I have a cow that, on August 9th last, had a heifer calf, apparently at full time; indeed, so fine a one that I am rearing it. The cow milked well for about a month, and then suddenly lessened the quantity, and shortly ceased to give any. On September 26th she took the bull, and from that time I noticed nothing unusual with her, though constantly seeing her, until December 24th, when she had another calf, a bull, strong and full-sized, and certainly not premature. The calf is now alive and doing well, and the mother is giving as much milk as after any of her previous calvings.

She was running with a bull during last March till April 25th, when the bull was castrated, and she could not have had access to any other till September 26th, when she was seen to be in season, and sent to a neighbour's bull and served.

I think that you will agree with me that it is a most extraordinary case, if it is not altogether unprecedented, and I therefore considered worth calling your attention to it.

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## RABIES IN KANDAHAR, SOUTHERN AFGHANISTAN.

BY CHARLES CLAYTON, M.R.C.V.S., ROYAL ARTILLERY.

The case I am about to relate came under my notice in March last. The camp occupied by this force, General Stewart's, was at that time situated about a mile from the city of Kandahar, on some rising ground, protected in the rear by a species of back-

bone ridge of bare hills, separating us from the Argandab Valley The plain around was intersected by dry channels and small ravines, which served as lodgings to innumerable half-starved pariahs, whose howlings at night rendered sleep almost impossible. Unaccustomed to our presence, they at first contented themselves with prowling about the outskirts of the camp, devouring scraps and filth of every description, and in hard times, for want of something better, greedily consuming the flesh of the dead camels to be seen here and there dotted over the *maidan*, their distended carcases barely covered with a few inches of the soft, shifting sandy soil which prevails in this locality. Traces of these mounds are even now to be met with not five hundred yards from the walled-in camp we occupy at this date. Little notice was taken of these roving mongrels until one fine morning, when three chargers, the property of Colonel Hills, V.C., Major Chapman, R.A. and D.A.Q.M.G., and Captain Gaselee, were reported as suffering undoubtedly from Rabies. The late and deeply regretted Veterinary Surgeon Blanchard was called in, and confirmed the statement. One horse died, the others were destroyed. A short time after, a horse, the property of Surgeon Rogers, A.M.D., was destroyed because suffering from the same terrible disease; but in all these cases the period of incubation could not be fixed.

The case I am now about to relate concerns a horse attached to the G Battery, 4th Brigade, Royal Artillery, of which I have had charge since the commencement of operations in this part of Afghanistan. In this instance the period of incubation is correctly fixed. Before I proceed, I may as well state how.

On the 5th March, about 12 o'clock p.m., the stable sentry saw a dog pass through the gun-park, approach No. 5 sub-division, and seize the first horse, No. 21, Stud-bred, by the lower part of the head; immediately the sentry ran towards the spot, but the dog made off, and was not seen again. The wound produced was so slight as to have been completely overlooked, although traces were eventually found of a small cicatrix on the off side, between the two nostrils. The sentry did not think the event worthy of mention until he became aware of the nature of the disease, and saw the isolated horse firmly secured to the wheel of the forge by means of several head or heel-ropes.

The horse, No. 21, above mentioned, was reported off his feed and uneasy, about 9.30 a.m., on the 27th March, 1879. He was first seen by the farrier-sergeant, who thought, from the restlessness he displayed, that it was a simple case of Colic.

On my return to camp from my morning ride, I examined the horse, and was much astonished at the peculiar appearance he presented, not being in possession of any facts which could explain the reason for such a state. The patient was extremely restless; saliva flowed freely from between the partially-closed lips; but general twitching of the muscles of the whole body prevented me from taking the pulse or respirations. The general temperature of the body was very high; the visible mucous membranes highly injected; progression was slow, and locomotion uncertain and difficult, the hind-quarters balancing to and fro even at a very slow walk. The patient moved as a blind horse, hesitating where to place the uplifted feet. Great excitability was manifest; at the slightest noise the ears were carried forward, and the whole of the horse's attention concentrated on what was going on around. The muscular twitching became more marked, amounting almost to trembling of the whole body. Occasionally, and without any perceptible cause, the patient would become more or less disturbed. On water being presented, the muzzle and nearly half the head were eagerly plunged into the liquid, and vain efforts were made to quench the thirst; but deglutition was impossible. Grass was also given, and it was immediately seized with avidity, taken into the mouth, partially masticated, but never swallowed. I had no doubt the case was one of Rabies, and, accordingly, firmly secured the horse to two wheels of the forge by means of many strong head and heel-ropes. No change appeared in the state of the patient until about 10 p.m., when Paraplegia set in. From then until 2 a.m. the horse struggled continuously. He died about the latter hour on the 28th March. I regret that the inclement weather—heavy rain—prevented me from making a *post-mortem* examination. The period of incubation was twenty-three days.

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## CHRONIC VENTRAL HERNIA IN A HORSE.

BY T. BARKER, M.R.C.V.S., LONDON.

On December 29th I forwarded a parcel, addressed to the Editor of the VETERINARY JOURNAL, at the Brown Institution. It contained a great portion of the off-flank of a brown mare, which I had had killed on the 22nd of that month. The animal, through an accident, had for some time suffered from abdominal hernia. On making a *post-mortem* examination the same night, I found, when the skin was removed, a very small portion of the bowel slightly protruded through the thickened portion of the flank; the external orifice being not larger than would admit my finger. On opening the abdomen I was somewhat surprised to find the bowel twisted, and close to the internal orifice of the late ruptured abdominal wall; the internal orifice, I saw, was much larger than the external. I thought the morbid specimen might interest you, hence I decided upon forwarding it, not attempting to dissect any portion of it, though from the appearance of the external thickened portion of the flank during life and after, I am inclined to think that upon opening up the same, you will find another portion or loop of the bowel running backwards, inside the enlargement, but external to the abdominal wall, I should therefore like you to inform me if such was found to be the fact.

I have enclosed the history of the case. Should you deem it of sufficient interest to be worthy a place in your valuable Journal, you are at perfect liberty to insert it.

On September 30th last I was sent for in haste to a valuable brown carriage mare, six years old, the property of B. M., Esq., of Clarence Gate, Regent's Park, which was said to have had an accident. On my arrival, I found the animal in a very excited tremulous state, and bathed in profuse perspiration. Seeing that the off-side flank was greatly distended and swollen, and judging the nature of the enlargement to be rupture of the abdominal muscles from some cause, on inquiry I was informed by the coachman that he and his groom were in the act of putting the mare in double harness (on the near side) to a waggonette, when by some means she got down on her flank on the roller-bolt of

the splinter-bar of the carriage. On this projecting roller-bolt she lay on her flank for twenty minutes, or more, struggling and twisting about; and from her weight and struggle she had forced this projection through the abdominal muscles, leaving the skin intact at the situation of injury, the coachman and groom doing what they could to induce her to rise, without avail. At last they secured ropes to her legs, got her turned over and freed from the vehicle. It was then noticed by them that the mare's flank was greatly swollen. After such a statement, the nature of her injury was evident. I found her in the condition above-mentioned, and it was with some difficulty I could approach her to examine the extent of injury; for in attempting this she leaned so much towards me, that she almost lost her balance, coming nearly to the ground with her quarters. In the brief examination that could be made, I found a slight superficial skin-wound some distance posterior to the seat of hernia. I may here remark that about six weeks previously I was called upon to examine this mare as to soundness at the time of purchase, and she was then such a very nervous excited animal that it was with difficulty I could do myself justice in the examination of her extremities.

The treatment adopted was as follows: I immediately gave her a draught composed of Aloes Sol. ʒiii., Ol. Lini. ʒvi., Amon. Liq. Acet. ʒii., Opii. Tinct. ʒiv., Ether Chlor. ʒvi. I had then placed on her a harness pad, with crupper and breeching attached, and while this was being done she stood perfectly quiet. A good body-roller was passed round her in the situation of the hernia, bringing the stuffed part of it where required to bear on the part; with a view to get more pressure, I had a pad of tow well saturated in Calendula lotion, and with this I could so far press up the dependent bowel to some extent through the opening in the ruptured muscles, which I found would admit my closed hand. After getting the pad of tow in position, the body-roller was then, at its stuffed part, brought to bear on it by buckling the roller tight, and fixing it in its situation to the crupper and breeching. I ordered the abdomen to be well fomented with cold water twice a day for one hour, and the Calendula lotion to be applied after each fomentation; the animal's head was secured, and sloppy bran, with linseed-tea and

oatmeal gruel alternately, was allowed. The next day the mare was calm but pulseless; bowels not acting freely. Gave, night and morning, for three following days, small doses of Aloes Sol., Ol. Lini, Aconite Tinct. ♏x., Ether Spt. Nit. ʒii., with a view to nauseate her stomach, reduce her appetite and excitability, and keep the bowels gently open, so that we could manage to treat and handle her. For three more days the same medicine was given but once a day; after this, for a week it was given on alternate days, and the fomentation once a day. On my daily visits I saw particularly to the body-roller; I had a leather pad made, suitable to place under the roller, to increase the upward pressure, but she would not bear it. Finding at the end of about three weeks that she showed symptoms of abdominal pains, and the bowels not acting freely, I gave a couple of oleaginous draughts, combined with Opii. Tinct. ʒii., Ether Spt. Nit. ʒii.; removed the harness, with roller, and released her head. The pain and excitability soon subsided; the swelling and enlargement caused by the bowels was greatly reduced. I was pleased at this time to find the orifice in the ruptured muscles was also much diminished; the bowels could be easily pressed upwards into the abdomen. After allowing her three days' liberty and rest, the harness and roller were replaced, and the pressure from it gently applied for a week longer, then dispensed with. She was now allowed freedom in the stall, and food as before, with a small allowance of chaff; she was also transferred to a loose box, where she continued until December 22nd. She having, between September 24th and December 21st, two attacks of abdominal pain, I found that one or two oleaginous draughts gave relief; but an attack on the 21st-22nd of that month was so severe that it was decided to have her killed. When in attendance on the animal, I often noticed a gurgling noise caused by the action of the bowel at the seat of injury.'

[This case of traumatic abdominal hernia owes its interest to the fact that the transverse and internal oblique muscles having been lacerated, the intestine found its way through the opening, and formed a sac between the two oblique muscles of the abdomen. The process of repair had left only a small aperture for the passage of the intestine, which at times was compressed by

the constriction, and consequently gave rise to the symptoms of abdominal pain. The knuckle of intestine between the layers of muscles was not large, but the portion immediately in connection with it within the abdomen was so dilated as to work like a small stomach ; this portion, as well as the mesentery belonging to it, had undergone adhesive inflammation, and was greatly thickened.]

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## HORSE-POX, OR STOMATITIS PUSTULOSA CONTAGIOSA.

BY GEORGE FLEMING, F.R.C.V.S., ARMY VETERINARY INSPECTOR.

THE great interest which attaches at present to the variolous and varioloid diseases of animals, in connection with animal vaccination, renders it something in the nature of a duty for those who have had the opportunity of observing these maladies, to publish their observations, as a contribution towards the solution of some important points in connection with them. For if a recent discussion among vaccinators and others be taken as evidence of our present knowledge of Variola among animals, it must be confessed that this knowledge is meagre and confusing in the extreme, and shows an amount of ignorance of comparative pathology, which we could scarcely credit, great though we previously knew that ignorance to be. The only creatures admitted to be liable to Variola in that discussion, were man and the sheep ; merely, it appeared, because the speakers, from their limited experience, had only seen these two creatures affected with a variolous disease *sui generis*. If we are to believe in the existence of what we only, individually, see, it is to be feared that the knowledge of even those gifted with the keenest vision and the most highly-trained faculty of observation, would be extremely limited, while the blind would be totally and hopelessly ignorant of everything. To assert that only mankind and sheep have a Variola peculiar to themselves, and to throw discredit upon the statements of most competent observers who have witnessed other species affected with variolous disorders, which had not been communicated from man or the sheep, requires an amount of courage which many would be inclined to call blind temerity.

I do not intend at present to discuss the variolous disorders of any animal except the horse; and as I can treat of the subject from personal experience, I shall confine myself to a simple enumeration of facts as they presented themselves.

The history of the disease possesses much interest, from the fact that Jenner, the introducer of vaccination, attributed Vaccinia in the cow to infection from horses suffering from it; though from one of the symptoms which often accompanies it, he thought it was the more common equine disorder known as "Grease." Horse-pox is transmissible to the cow and other animals, as well as to man, and it gives rise to a localised eruption identical with that of Cow-pox; successful inoculation with the virus will protect man from Small-pox, and the horse and cow from their Variolæ. Dr. Loy, of Pickering, described it in 1801, but in consequence of its existence being denied in this country, it has escaped notice nearly altogether, and appears to be only known to a very few veterinarians.

On the Continent careful search was made for it, but it was not really until 1860, when a notable outbreak occurred among cavalry horses at Rieumes, near Toulouse, that it was fixed upon. Sarrans and Lafosse studied it carefully, and they had ample opportunity, as it attacked more than one hundred horses in three weeks. Lafosse successfully inoculated several cows and children; he named it the *Maladie Pustuleuse Vaccinogène* of the horse. Subsequently it was described by Dard as the *Rhinite Pemphygoide;* and Bouley made a most exhaustive inquiry into its nature, at Alfort, in 1863 and 1864. At that time it was very prevalent about Paris, and its inoculability from horses to other animals, and to mankind, was abundantly demonstrated. Bouley at first designated it *Stomatite Aphtheuse,* then *Herpès Phlyctenoïde;* but at last recognising its true character, he named it, after Loy, the *Horse-pox.*

In the VETERINARY JOURNAL (vol. v., p. 81), Professor McEachran, of Montreal, published a most interesting account of an outbreak of Horse-pox in that city, and alluded to successful inoculations of cattle, and to several people having become accidentally inoculated with the contagium of the disease. In a more recent issue of the Journal (vol. vii., p. 293), there is a

translation of an excellent article from the pen of Ellenberger, and which appeared in the *Archiv für Wissenschaftliche, etc., Thierheilkunde*. In that article the malady is designated *Stomatitis Pustulosa Contagiosa*, and its ready communicability to other horses and to mankind is also shown. In the same Journal (vol. vii., p. 371), Army Inspecting Veterinary Surgeon Owles reports an outbreak of the disease at Aldershot, in January and February, 1871. The rarity of the malady may be judged of from the fact, that Mr. Owles, during thirty years' experience among army horses, had only seen it twice, and was particularly struck with its peculiar features. In the same Journal for September, 1879 (vol. ix., p. 204), reference is made to an outbreak of Horse-pox in France, which derived its interest from the fact that a number of unvaccinated soldiers were successfully inoculated from the pustules ; calves were also successfully inoculated, and from them people were vaccinated.

In a recent number of the *Deutsche Zeitschrift für Thiermedicin*, Professor Friedberger, of the Munich Veterinary School by the same title given to it by the Berlin teachers, furnishes a description of the disease, and relates the results of experiments. I intend to publish a translation of Friedberger's excellent paper at an early opportunity.

In addition to all this evidence, Continental veterinary literature, and especially French, contains many references to the disease, as it has been seen by some of the ablest veterinarians ; and in "Veterinary Sanitary Science and Police" (vol. ii., p. 73), because of its great contagiousness, a section was devoted to it.

The malady, as has just been remarked, appears to be extremely infrequent, for until the cases I am about to describe occurred last September, I had not seen it, notwithstanding the large numbers of horses I have had under observation and treatment during twenty-five years. I may here remark that Professor Trasbot, of the Alfort Veterinary School, in a series of papers just completed in the *Archives Vétérinaires*, contends that the common disease of young horses, "Strangles," is nothing more or less than Variola, and he counsels inoculation as a protective measure. I have no desire to controvert the opinions of such an excellent authority in veterinary pathology as Trasbot, but I

may, nevertheless, state that I have never witnessed, in the very many cases of "Strangles" which have come under my care, anything at all resembling this disease; and I am compelled to maintain that "Strangles," and the disorder under consideration, are two dissimilar and distinct maladies.

With regard to the German designation of "Stomatitis Pustulosa Contagiosa," I confess it is not quite correct, as the disease is not confined solely to the mouth in any instance, and in some cases it appears as a more or less general eruption over the body and limbs.

Now for my own experience of the malady.

Towards the end of August, 1879, a small number of remount horses joined my regiment at Windsor; they were apparently in good health, and none of them were under four, nor more than five years of age. There was no disease among the other horses in barracks. A few days after they were located in the remount stable, one of the horses (a four-year-old gelding) was reported as having a sore place between the ears, about the junction of the mane and fore-lock. The hair was matted by encrusted discharge, and this being clipped away, a somewhat raw surface, about the size of a shilling, was discovered. This appeared to have been a very minute abscess or group of pustules, which had been broken and abraded by the head-stallof the head-collar and bridle. It was so trifling, that merely cleansing with warm water and keeping off pressure were prescribed. A thin purulent discharge was noticed for two or three days, when the sore became crusted over and healed. About the same time, the trooper who attended to the horse thought it did not masticate its hay so freely as it should, and on September 4th it was observed that the angles of the mouth were swollen and sore. On the 5th the horse was brought into the hospital stables. Its appearance was then very startling. The lower part of the face—nostrils, lips, and particularly the angles of the mouth—was so much tumefied, as to make the animal somewhat resemble a hippopotamus. Saliva flowed from the mouth, and the commissures were covered with a dirty-yellow pus. The swelling was tense and hot, the thin black skin being smooth and glistening. On opening the lips, the inner surface

of these, as well as the gums, was found to be covered with vesicles of various sizes; these were both discrete and confluent, the latter forming irregular-shaped patches more or less ulcerated or abraded. The unbroken vesicles were generally acuminated, had a pearly-white aspect, with an inflamed areola, and varied in size from the dimensions of a millet-seed to that of a pea. Their contents were rather solid than fluid, and when removed a rather deep concave depression remained. There were a few vesicles on the floor of the mouth, and some on the skin of the lips. These latter were much larger than those inside the lips. There was very slight fever, the appetite was but little impaired, and sloppy food was freely eaten. An astringent gargle, composed of alum, was ordered. On the 6th there was no change, but on the 7th there was an eruption of nodules and pustules over the body. The nodules felt like duck-shot, and the pustules were covered with a dark brown crust. The mouth was very sore, a quantity of thick, ropy saliva continually flowing from it. Fresh crops of vesico-pustules had appeared on the lips and gums, and the tongue towards the frænum was involved. The submaxillary glands were somewhat swollen. The temperature was 101.1°; the respirations and pulse were normal. On the 9th the tongue was much affected, especially towards its sides. The horse experienced great difficulty in eating, though the sores on the gums and lips were healing. Dry, dark-brown crusts were common over the body. From this date to the 12th there was very little amendment in the condition of the horse, but convalescence now set in, and recovery was complete on the 18th.

On the 11th of the same month another horse was admitted as affected with this disease. This animal (a mare) had joined the regiment nearly a year before as a three-year-old; it stood in quite a remote part of the barracks, altogether away from the remount stable, and had never been in contact with the young horses. This circumstance, and the more serious character of the malady in this animal, occasioned some alarm, as it was feared an extensive outbreak was about to take place among the troop horses. Believing the disease to be contagious, I was at first in great difficulty with regard to accounting for its

appearance in a distant stable, until, on a searching investigation, I found that this horse's bridle having been broken and sent to the saddler for repair, the trooper surreptitiously removed the other horse's bridle from the remount stable, as it was not in use, and wore it on this horse for a day or two. This furnishes a very striking proof of the contagiousness of the disorder.

In this horse there was swelling of the lips, the commissures of which were very prominent, tense, hot, and painful. The vesiculo-pustular eruption was most marked on the chin, around the margin of the lips, on their inner surface, and on the gums. The sides of the tongue, the fræum, and the floor of the mouth were also irregularly studded with the vesicles, and there were even two or three on the dorsum of the tongue. The submaxillary glands were tumefied and painful, but there was no indication of abscess. Ropy saliva flowed from the mouth, and attempts at masticating hay evidently gave rise to much pain; though the appetite did not appear to be much impaired. There was slight cough. The temperature on admission was 102.2°, pulse 44, respirations normal. On the 12th, the mouth and face eruption had a still more striking appearance. The animal's coat stared as if from cold, though the surface temperature was good. Several clusters of vesicles in the mouth had become confluent, producing sores varying in size from that of a threepenny piece to a sixpence. The lower part of the face and the submaxillary glands were more swollen. Average temperature 102.1°, pulse 44. On the 13th the animal was very dull and had no appetite, and the respirations, though not increased in number, were deeper than usual. The nostrils were so much swollen that the breathing was noisy. Patches of vesicles on the sides of the tongue and floor of the mouth had coalesced, and formed somewhat deepirregular sores; salivation rather profuse. Average temperature 103°. On the 14th, the entire face was swollen, and there were vesicles not only at the entrance to the nostrils, but high up on the Schneiderian membrane. Around the muzzle and on the side of the face, there were vesicles, or rather pustules (for on the skin they were the latter, while on the mucous membranes they were the former); and under the right eye they were numerous and inclined to be confluent. The

mouth presented somewhat the same appearance as on the 13th. Temperature 103°, pulse 48. Next day the temperature was lower (102.1°) and the pulse 40, but the coat was lustreless and erect, and there were occasional rigors. The mouth was in the same condition. The majority of the pustules on the face and lips were now covered by thick brown crusts. On the left hip and on each side of the withers was a somewhat large suppurating sore, which appears to have been due to confluence of several pustules. The discharge was thin and of a yellowish-brown hue. On the 16th, the commissures of the mouth, which had been discharging the thin dirty-yellow looking pus, are now covered by brown crusts, as well as the place on the hip and left side of the withers; that on the right side is still discharging. 17th.—The horse is better, and in consequence of the improvement in the condition of the mouth, is able to masticate a little hay. Pustules have appeared in various parts of the body, and some are present on the fore-limbs, immediately above the knees Temperature 100.2°, pulse 40.

From this date the return to health was gradual. The sores on the gums and in the mouth slowly healed, those on the sides of the tongue being large, and presenting a very peculiar appearance. The crusts fell from the parts where the pustules had been, and on the chin and margin of the lips the cicatrices had a most remarkable and characteristic aspect. Where each crust had been there was now a deep depression, the bottom of which could not be seen, owing to the retraction of the margin; and around this hole or "pit," the skin—formerly black—had lost its pigment, and offered a narrow white ring—in fact, there was the same appearance, though in a highly exaggerated form, that is seen in the recent "pock-pit" of the negro. This pitting was observed in the previous case, though it was not nearly so marked; in the following case it was still more conspicuous.

This case was a cryptorchid horse, five years old, which had been operated upon for removal of the concealed testicle on September 15th. Everything appeared to be going on favourably, the wound was suppurating, and the swelling was comparatively trifling. There was no general disturbance of health. The horse stood in a loose box at the end of the hospital stable, and had

never been in direct contact with the foregoing cases. On the 22nd, there was much tumefaction of the prepuce, and the hind limbs were swollen without any assignable cause; this swelling had not been noticed the previous day. On the 23rd there were a number of large papular-like pustules, about the size of a three-penny or fourpenny piece on the prepuce, which was yet more swollen; the horse moved stiffly on the hind legs. The temperature was 103°; pulse 52; respirations 16. 24th.—Some of the pustules on the prepuce were crusted, the crusts being very dark brown. Inside the left thigh were four large nodules; these and the preputial eruption might have been mistaken for Farcy. The knees were swollen, and a number of smaller pustules or papules were apparent on their inner and outer surface. On the front of the right anterior coronet was a large discharging patch, exactly like that seen on the top of the head of Case 1. The hair stood erect and bristly on this patch, which was about the size of a five-shilling-piece, and the fluid covering it was very thin and of a dirty yellow tint. The lower part of the face was swollen, and there were four comparatively large crusts on the lower lip. These crusts were dark-coloured, and offered a character not observed in the other horses—they were slightly umbilicated. There were about a dozen nodules and pustules on the upper lip—some of the latter being more or less crusted. Inside the lips and on the gums there were not more than half-a-dozen very diminutive opalescent vescicles. The temperature had fallen to 101°, and the pulse and respiration were nearly normal. The thigh nodules were crusted. The general health appeared to be very little affected. On the 25th the under lip presented a still more characteristic appearance. The moist patch on the fore limb was drying; but another has appeared on the front of the pastern of the near hind leg. The temperature was 100.2°. The crusts had fallen or been rubbed off the lower lip on the 26th, leaving quite deep pits.

The case continued to run its course like the others, and on October 4th the horse was reported as well,

This horse had not been in contact with any of the others, being kept confined to its box after the surgical operation. The only way, it was surmised, in which the infection could have

been conveyed, was through the medium of the stablemen, drinking out of the same bucket, or using the same sponge to clean the wounds which had been employed about the mouth or nostrils of the other horses. I think the latter the most probable mode of infection, from the fact that the eruption was first noticed in the vicinity of the scrotal wound.

*Accidental transmission of the disease to mankind.*

My farrier-major, thirty-four years of age, attended upon and dressed the mouth of Case 1 from the time of its admission to hospital. On or about the morning of the 5th of September, while washing his hands, he made a small scratch on the inner side of the third finger of the right hand, where the skin is very thin. On the 8th he noticed a small "fester," as he termed it, over a little white spot which had appeared at the corner of the scratch. He did not think anything of this until the following day, when it began to be somewhat painful and swollen around the scratch, and these symptoms increased until the morning of the 12th, when he suffered so much that he was compelled to go to the hospital. Surgeon Hensman, 2nd Life Guards, saw him, and to him I am indebted for the following medical report of the case :—

The finger was swollen, there was a thin, light-coloured scab over the scratch, and a thin, lymph-like fluid exuding from under and between it. There was no swelling of wrist or arm or affection of the lymphatics. He placed a piece of wet lint over it merely to keep it clean. General health at the time very good. On the 13th another horse suffering from the disease was admitted. This was reported as a more severe case. The farrier-major treated and handled this animal as he did the last, regardless of his finger. He experienced nothing unusual from doing so until the 19th, on which day, at bed-time, the hand commenced to swell, red lines appearing up the arm along the course of the lymphatics, while the axillary glands became very sore indeed, though not perceptibly swollen. On the morning of the 20th he reported himself to me (Dr. Hensman) at hospital. The finger, back of hand and wrist, and fore-arm, were then much swollen ; the wound was covered with a kind of moist lymphatic exudation ; the scab was of a dark-brown

colour; pressure gave pain, but caused no exudation of pus—a little oozing of lymph only. Altogether, the appearance of the finger was very much like that of modified Vaccinia. He had lost his appetite, and complained of slight feverishness. His tongue was fairly clean and pulse normal. Gave tonic medicine, and as the finger looked very angry and inflamed, I told him to bathe it with warm water.

I saw him again on the 21st. Everything was much the same, except that he stated he felt occasional rigors, followed by flushes of heat. He remained in the same condition until the 23rd, when the swelling was decreasing. There was no soreness in the axilla or down the arm; the red lines had disappeared, leaving a yellowish stain in the skin, most marked over the biceps muscle. No febrile symptoms, but no appetite. The appearance of the sore is very like modified Vaccinia, accompanied by much swelling and inflammation. Lymph still exudes, and there is no appearance of any pus. 24th.—No change in sore, finger hard and brawny. States that he feels much better, and his appetite improved. The conjunctivæ looked slightly yellow. Poultice the finger. 26th.—Slowly improving. Hand not nearly so sore, the swelling subsiding at night, back of hand softer, but finger still much swollen and hard. 29th.—Finger getting smaller, but appearance very much the same—unhealthy-looking, and covered with a dark-brown slough. Continue poultice. 30th.—Slough and scab commencing to come away. Entire size of scab 1 by $\frac{3}{4}$ inch. Finger still swollen, and itching continues around the edge of the wound. Granulations exposed are large, somewhat pale and flabby, and bathed with healthy pus. October 1st.—More slough and crust have come away. Granulations healthier, wound clean, no pain, itching less.

From this time the wound was treated as a simple sore, and gradually healed.

Such is an outline of the farrier-major's case as given by the regimental surgeon. I may add that the man had been seventeen years in the regiment, and on joining, an unsuccessful attempt had been made to vaccinate him. He appears to have been successfully vaccinated when an infant, as he bore well-

marked traces of the operation. From what I personally saw of him and the finger, I was deeply impressed with the analogy, if not absolute identity, of the case to that of ordinary vaccination in a somewhat severe form.

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## BLOODLESS OPERATIONS IN VETERINARY SURGERY.

BY F. SMITH, M.R.C.V.S., ROYAL HORSE ARTILLERY, INDIA.

As the bloodless method of operating plays such an important part in human surgery at the present day, I determined to give it a trial in the horse; and having occasion to perform Neurotomy, I looked upon this as an excellent opportunity for the experiment. My patient being cast, I proceeded to bandage the limb tightly upwards from the coronet, and having got above the knee, I cut off the supply of blood by pressure on the "radial" artery. As I had no tourniquet, I improvised one of very stout tape, passed round the limb four or five times, and tightened by means of a stick passed between it and the leg, and by turning which the requisite pressure could be brought to bear on the artery. My bandage was then removed, and I proceeded to operate. The supply of blood had been so completely cut off, that it seemed like operating on the dead subject—*not one drop of blood was lost* until the operation was over, and then but very little. I look upon this as a very important point gained, as no staining of the tissues takes place, consequently there is no difficulty in finding the nerve; and any one, like myself, who has divided a small branch of a vein or artery in exposing it, and has had to flounder about with a needle in search of it, can fully appreciate the bloodless method. I strongly recommend it for all operations on the limbs where hæmorrhage would interfere with their due performance.

An Esmarch's bandage is really the proper thing to use for emptying the limb, and then a stout piece of indiarubber is wound tightly around the leg above this, and tied, and this cuts off the supply of blood.

# THE PATHOLOGICAL HISTOLOGY OF EPIZOÖTIC PLEURO-PNEUMONIA.

BY CHARLES S. ROY, M.D. LONDON, ASSISTANT AT THE PHYSIOLOGICAL INSTITUTE OF THE UNIVERSITY OF STRASSBURG.

(*Continued from page* 20.)

WE now come to the description of the morbid changes which are found in the alveolar substance proper. The characters presented by this tissue vary greatly at different parts of the diseased mass, under the influence of causes which in some cases escape even the most careful investigation ; whilst in others, the variations in appearance are manifestly due to the stage to which the morbid process has attained, or to the varying degree of organization or degeneration which the exuded cell-elements have undergone.

At the edge of the affected part there is often some degree of capillary congestion. This is rarely, however, a marked feature, which is only what might be anticipated, seeing that the rich liquid and solidified exudation must necessarily raise considerably the extra-capillary pressure, so that, on the blood-pressure within the capillaries falling with the death of the animal, the blood will be forced out of the vessels. It is probably on this account that the diseased tissue, even near the margin of the affected part, not infrequently appears anæmic.

The air within the alveolar cavities is at first replaced by the thick fluid, rich in albumen, which has been repeatedly referred to, and which disappears during the process of hardening the specimen for the purpose of cutting sections. At this early stage, the walls of the alveoli show little change beyond some swelling of the contained nuclei and of the epithelial cells with which they are more or less completely lined.

In the deeper parts of the affected mass, we find the alveoli filled with coagulated matter, which varies in character at different places. At some parts the air-cells are occupied by typical fibrinous coagula, in the meshes of which are seen a few scattered leucocytes and red blood-corpuscles, while the walls present no striking change in appearance ; the characters of the

tissue, in short, are those found in the stage of red hepatisation of Croupous Pneumonia of the human lung.

At other parts, again, of the same lung, the contents of the alveoli may be composed almost entirely of cell-elements, which are usually partly epithelial and in part young cells containing a varying number of nuclei. At some places, the epithelial, or it is perhaps better to call them epithelioid, cells predominate along with a number of granules of varying size ; at other parts again, only lymphoid cells are found, which may be either closely packed together and filling up the cavity of the alveolus, or which may be more or less thickly scattered through a finely molecular substance. Or, again, the cavities of the alveoli may contain little else than this finely molecular matter, scattered through whose substance, however, there are usually one or two epithelioid cells or leucocytes. Between these different appearances all varieties of intermediary conditions are encountered.

The walls of the alveoli and infundibula are also affected in a different manner, and to a varying degree, at different parts. They retain occasionally an almost normal appearance, while elsewhere, on the other hand, they may be greatly thickened, and their interstices flooded with lymphoid cells. As a general rule, they are found somewhat thickened with a moderate number of young cells scattered through their substance.

Figs. IV., V., and VI., represent the appearances which are most commonly encountered in the histological examination of the alveolar tissue. Of these three, that condition which is illustrated by fig. VI. is, perhaps, the one which is most frequently met with.

Sometimes the walls of the alveoli are found covered with a continuous layer of epithelial cells, as is represented in fig. VII. ; more rarely, this layer is double, two rows of cells being seen (when the wall is seen in section) superposed, and still to all appearance firmly attached to the alveolar wall. At other parts, the wall of the air-cell or infundibulum is thickened by the growth in its substance of connective tissue, as in pulmonary Cirrhosis. Elsewhere, again, a condition of considerable interest is met with, in which the alveolar and infundibular septa are

thickened by strong bands, composed entirely, or almost entirely, of smooth muscular fibres, which can be readily recognised from their characteristic staff-shaped nuclei. Fig. VII. is intended to illustrate this condition.

It is only within recent years that attention has been called to the fact that the lung of man, as well as of most of the domestic animals, contains unstriped muscular fibres in the septa of the alveolar tissue. So far as I can learn, Rindfleisch* was the first to demonstrate the existence of such fibres in the parenchyma of the normal lung, and their hypertrophy in certain morbid conditions. He describes loop-like bundles of muscular fibres proceeding from the bronchioles at their point of entrance into the infundibula, and extending along the walls of the latter as far as their fundus, while at right angles to these loops, and running round the infundibula, are from two to four ring-shaped muscular bands lying in those alveolar septa which project furthest into the infundibular cavity. These bands he found hypertrophied in cases of the so-called "brown induration." These observations were confirmed by Stirling, Orth,† and by Buhl,‡ the latter of whom, in that form of Cirrhosis which results from desquamative Pneumonia, found a hypertrophy of the muscular bands in question. In some cases, indeed, he found the muscular elements so greatly predominating as to justify the term "muscular Cirrhosis," which he applied to the condition. Rindfleisch,§ on the other hand, found no increase of the muscular fibres of the pulmonary parenchyma in the cases of chronic desquamative Pneumonia which he examined. In various domestic animals, more especially in the lung of the cat, Eberth‖ found a very marked increase in the muscular fibres of the infundibular septa, both in simple chronic Pneumonia, and in those

* Rindfleisch, "Die Muskulatur der kleinen Bronchien und des Lungenparenchyma," *Centralblatt*, 1872, s. 65.

† Orth, "Zur Kenntniss der braunen Indurationen der Lunge," in *Virch. Arch.*, Band lviii.

‡ Buhl, *Lungenentzündung*, 2te Auflage, s. 58, 1873.

§ Rindfleisch, "Die chronische Lungentuberculose," *Arch. für klin. Med.*, Band xiii., 1874.

‖ Eberth, "Ueber Hyperplasie der Muskeln des Lungenparenchyma," *Virch. Arch.*, Jan., 1878.

forms which result from the presence of various parasites. We cannot, therefore, lay much weight on the presence of this muscular hypertrophy in cases of Pleuro-pneumonia, in which its occurrence is not rare; for it would seem that, in various chronic inflammatory processes affecting the lung, it has only to be carefully sought for in order to be demonstrated.

In those parts of the diseased tissue which present the characters of what has been called the *third stage*, the morbid changes found in the alveolar substance are, with some exceptions, fairly uniform. Here the air-cells are occluded by coagulated fibrinous or molecular matter which adheres firmly to their walls, and through which are scattered here and there a varying number of leucocytes and epithelioid cells. These cells are either partially broken down, or present an unchanged outline; but both they and the tissues forming the alveolar walls are characterised by their dull appearance, and by the imperfect degree to which their nuclei can be stained with hæmatoxylin or carmine. There is no disintegration of the tissue, but the often ragged outline of the alveolar septa, and the peculiar molecular change which they have undergone, and which gives the whole section a dull uniformity of character, form an *ensemble* which is strikingly in contrast with the appearances seen on examining sections taken from parts in the *second stage* of the morbid process. It requires no great histological experience to be able to tell at the first glance that the tissue in this condition has become necrosed.

In the dark-red hæmorrhagic parts, except that the capillaries are distended with red blood-corpuscles, and that a large number of these are found within the alveolar spaces, the characters of tissue are the same as those found in other parts of the affected mass.

The irregularity of the boundary line between the healthy and the diseased lung-tissue is, as has been said, due in part to the presence of pointed process, or extensions of the disease into the limits of otherwise unaffected regions of the lung. These extensions outwards of the exudation vary in shape and length in different cases and at different parts (in one case the morbid process could be traced stretching without interruption from the

posterior lobe, where the disease proper was situated, as far as the retrobronchial glands); but they have this in common, that they occupy the perivascular and peribronchial connective tissue, and point, therefore, towards the root of the lung. Such processes are never found extending under the pleura for any distance, as we might expect were the course of the lymphatics of the bovine lung the same as that which they take in man. This tendency to spread along the lymphatics is one of the characters wherein the disease in question differs from simple Pneumonic processes.

The exudation found surrounding the vessels, both beyond the general margin of the diseased mass as well as within its limits, is very uniform in its characters in different cases, and differs in no important particulars from the interlobular exudation, so that its description need not detain us further. The degree, however, to which the blood-vessels themselves and the bronchial branches are affected requires some notice, as it varies much at different parts.

The musculosa and intima of the vessels are often found altogether unchanged in appearance, and this although the adventitia be much infiltrated and swollen with the exuded material. In rarer instances, the middle and inner coats are found containing numerous cell-elements in their substance, and sometimes fibrinous coagula are seen between the deeper layers of the inner coat; the swelling, however, resulting from the presence of this fibrinous exudation is never, so far as I have observed, great in amount. Where the intima is deeply affected it is not rare to find the endothelial lining of the vessel replaced by a layer of young cells, and not unfrequently three or four such layers may be seen. This latter condition is represented in fig. VIII. This is what is almost invariably found in those vessels which pass to the hæmorrhagic parts, at some point or other of their course, and the situation of which is easily discovered from the presence, at the affected part of the vessel, of a firm clot occupying and more or less completely occluding its lumen. It is scarcely necessary to add, that the clot in such cases most probably resulted from the diseased condition of the inner wall and especially from the affection of the endothelial lining.

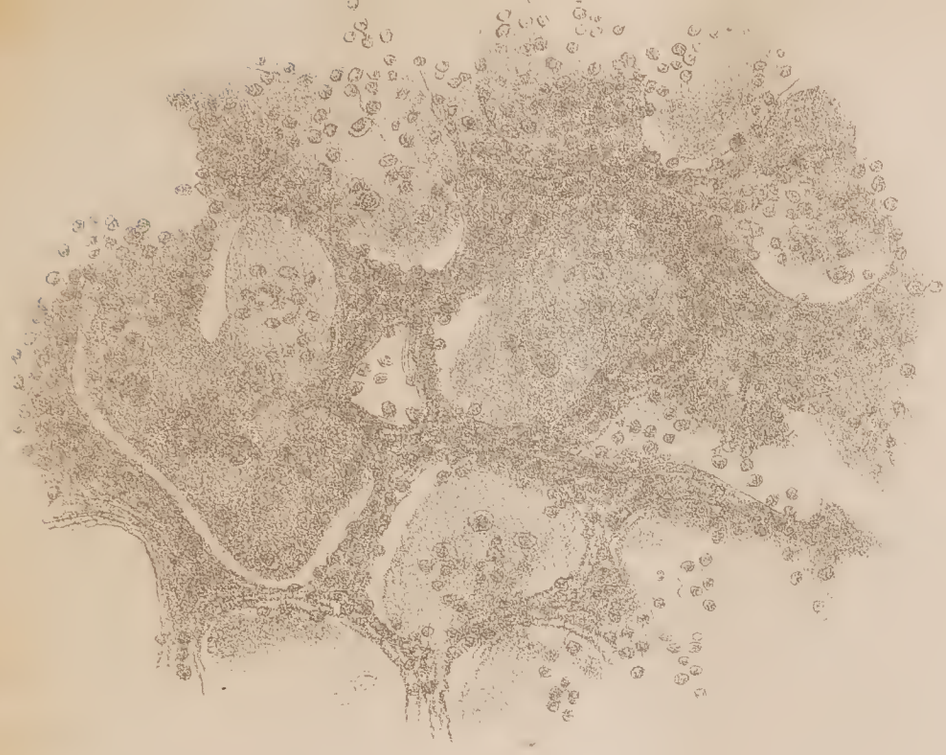

Fig. IV

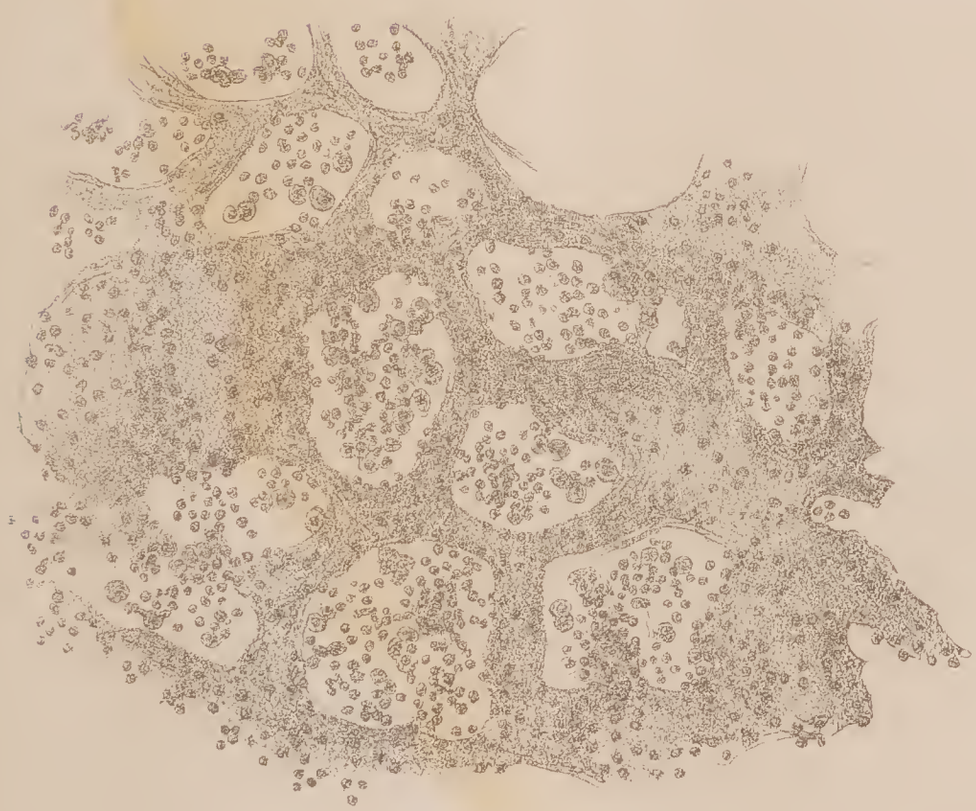

Fig V.

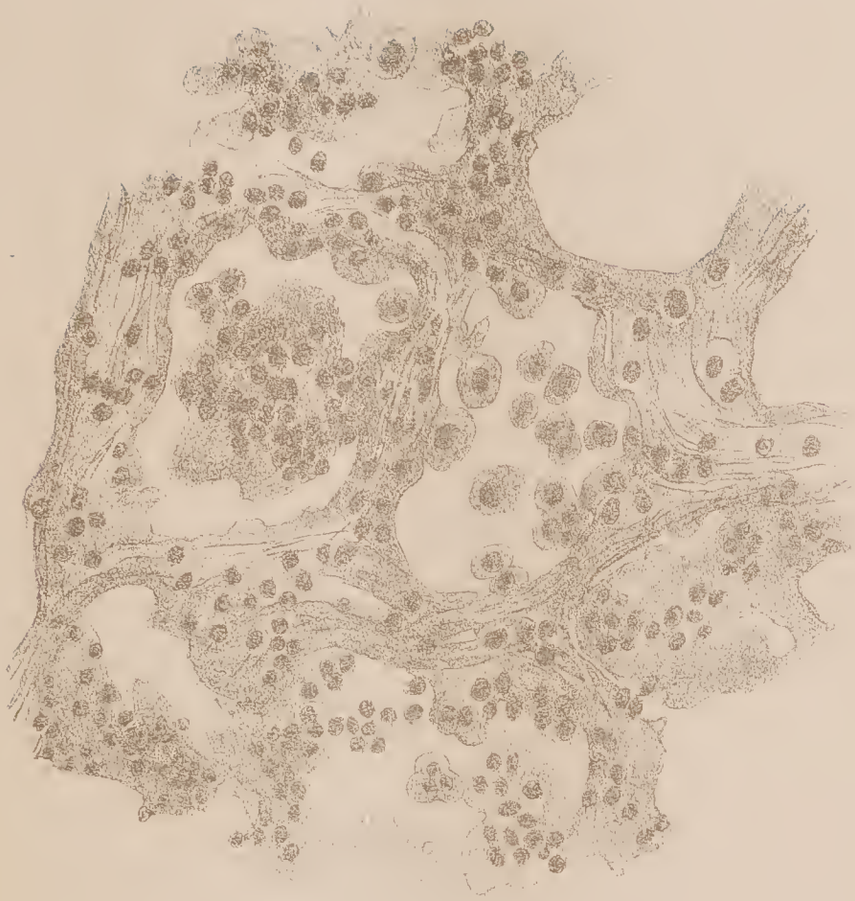

Fig. VI.

Fig VII

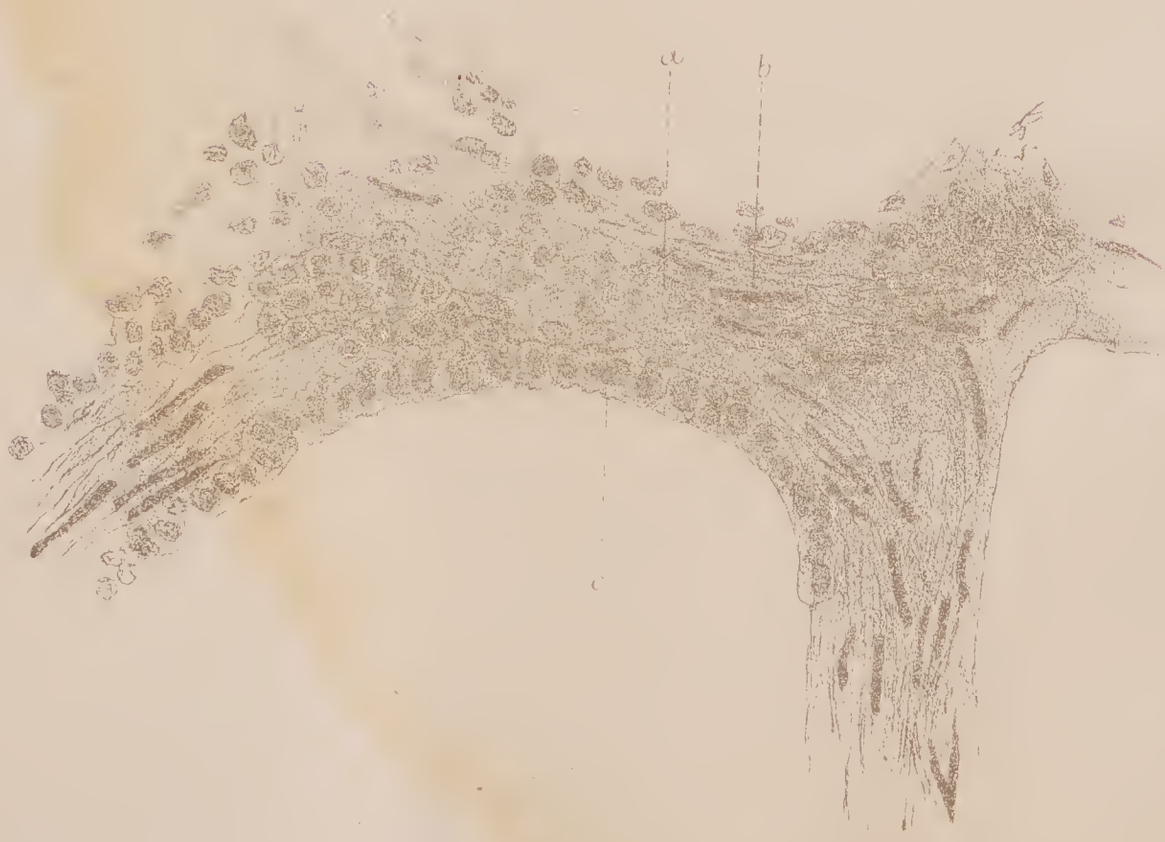

Fig. VIII

EXPLANATION OF THE FIGURES.

FIG. IV.—Condensed alveolar tissue. (Obj. No. vii. Hartnack. Oc. No. iii.)

FIG. V.— Do. do. (Obj. No. vii. Hartnack. Oc. No. ii.)

FIG. VI.— Do. do. (Obj. No. vii. Hartnack. Oc. No. iii. tube drawn out.)

FIG. VII.—Portion alveolar septum, *a*, containing (*b*) newly-formed smooth muscle-fibres, and covered at some parts (*c*) with a continuous layer of epithelial cells. (Obj. No. viii. Hartnack. Oc. No. ii., tube drawn out.)

FIG. VIII.—Vertical section from the wall of branch of the pulmonary artery, showing the endothelium replaced by young cells. (Obj. vii. Hartnack. Oc. No. ii.)

(*To be continued.*)

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# Editorial.

## THE ARMY VETERINARY DEPARTMENT AND THE ZULU WAR.

IT cannot be concealed that perhaps never at any period in the history of the Army Veterinary Department has there been more dissatisfaction prevailing, to use the mildest term, than during the last month.

As is well known, since the accession of the present Principal to the head of the veterinary service, great changes have been made; more life has been infused into it; mere seniority has not been looked upon as a sufficient claim to promotion; the qualifications of candidates for admission to the department have been most carefully examined and rigidly tested; and we believe everything has been done that man can do, under the circumstances, to give this section of Her Majesty's army an amount of efficiency, honourable feeling, and a degree of *esprit* which it never before possessed. In every corps to which members of our profession are attached, it is readily and generously admitted that the veterinary surgeons are a most useful, obliging, popular, and zealous body, and not a whit less scrupulous in conduct or gentlemanly behaviour than their brother officers. The first occasion on which the new order of affairs was really put to the test was the outbreak of the Zulu war. The efficiency of the Department was suddenly subjected to a severe strain. Shipload after shipload of horses, ready for active service, left our shores on the longest sea voyage our mounted corps had perhaps ever made; and the success with which they were carried to South Africa was largely due to the veterinary surgeons on board, whose able efforts in maintaining the health and efficiency of the horses in their charge elicited the warmest praise from commanding officers and others. The losses were astoundingly small, and the corps were disembarked at Durban in almost as good condition for the urgent work before them as if they had just left their troop stables at home. It was the same in the field. The veterinary surgeons shared the hardships

and dangers of their brother officers, and exerted themselves to the utmost to discharge their oftentimes most exacting and harassing duties. They hoped and felt that, with the changed aspect of affairs, their zealous efforts would not be in vain, or overlooked as heretofore, and that, in the terms of the new warrant of May 1st, 1878, their "relative rank would carry all precedence and advantages attaching to their corresponding military rank." On every side, from the General Commanding-in-Chief downwards, their conduct during the campaign has been lauded in the strongest terms, whether for the manner in which they discharged their professional duties, or for bravery in presence of the enemy, and the favourable recommendations transmitted to the authorities at home were neither few nor insignificant.

On the termination of the war, honours and rewards were distributed on a most liberal scale, and C.B.'s and C.M.G.'s were conferred without stint, seemingly, on every department except the veterinary; while promotion for service in the field descended even so low as to conductors of transport.

Notwithstanding the most pressing representations, the services of the veterinary officers have been completely ignored at home, so far as public recognition is concerned. We believe the Veterinary Inspector, who held the grade of principal veterinary surgeon in Zululand, and ranked as colonel, has, after much delay, been offered a good service pension of £50 a-year—the very lowest which could be given, and which is usually that conferred upon the most subordinate officers! This is all the reward and acknowledgment!

It is needless to say that an intense feeling of degradation and discontent, if not something stronger, has been engendered by what is considered most unfair and ungenerous treatment; the complaints at the slight the department has received, if they are not loud, are at least strong and bitter; while the sympathies of the entire army, as is evidenced by the military journals, are extended to the unfortunate veterinary surgeons who are so ungenerously and ungratefully left out in the cold, their claims despised, and their warrant ignored.

We can scarcely think that the treatment the Veterinary Department has received has been prompted by any feeling adverse to it. On the contrary, we are certain that if the authorities only knew how injuriously the invidious distinction they have conferred on it must operate with regard to the public interests, they would hasten to repair the damage and make amends for the oversight.

For many years army veterinary surgeons have laboured most undeservedly under certain disabilities, which have pained them somewhat acutely, but the Zulu war has supplied the crowning and supreme grievance. "It is now evident," say the best and most hopeful of them, "that nothing we can do, either at home or abroad, will remove from us those disabilities, or obtain for us that recognition which is so readily and bountifully accorded to every other department. We may do our very utmost in the field: generals and officers commanding may testify to the value of our services, and the zeal with which we have performed them; recommendations for honours and rewards may be stronger and

more numerous than are given to other officers—but all is in vain: when our hard-earned claims reach the Horse Guards, there they are stifled, and the indignity is thrust upon us of being unworthy of notice. The C.B. and C.M.G. are unsparingly conferred, and even officers at home have received these decorations for their services in regard to the war in South Africa. Surely the Principal Veterinary Surgeon was as deserving as these officers, and certainly the Inspecting Veterinary Surgeon in the field was as worthy as many who were decorated!"

It is impossible to refrain from regretting that such complaints should have any foundation. But it must be confessed that perhaps in no army in Europe are veterinary surgeons more rigidly excluded from such rewards than in our own. No matter with what distinction veterinary surgeons in the British army may serve, they can now have no hope of receiving reward or encouragement—so say the most impartial among them.

This, we confess, is a serious view, and if it is correct, augurs badly for the army; for it appears to be forgotten that veterinary surgeons are not now what they were forty or fifty years ago, and that for the service they are selected not only because of their professional ability, but also for their social qualifications. A slight or indignity inflicted upon the army veterinary surgeons will be felt by the entire profession throughout these kingdoms, and gentlemen will certainly not expose themselves to the risk of degradation or indignity by joining the Department. Therefore the supply of suitable candidates will cease, as in the medical department of the army, until this risk is removed; while those already in the service will feel disheartened, apathetic, and very averse to volunteer or display zeal when this is perhaps most necessary. All this is well known to every one. It is the hope of reward which sweetens labour, and when this reward is withheld, labour becomes insipid.

Every year the Army Veterinary Department increases in importance, and the duties imposed on it are becoming multiplied and serious. The best-educated, and the most trustworthy men the profession can produce are selected for it; they serve in every part of the world, and in every war, and it is recognised by all experienced generals that their services are absolutely indispensable, and are at all times invaluable. But if it be decided that army veterinary surgeons are not to be placed on a footing of equality with those whom they equal in every respect,—so far as rewards, decorations, and other privileges go—that, in fact, their warrant is a dead letter, and their feelings of no moment, then we greatly fear the army, and through it the public, will regret the decision as much as we ourselves do.

Knowing well the spirit which pervades the profession, the difficulty experienced, even before the Zulu war, in filling up the gaps in the Department with suitable men, and the absolute necessity for maintaining this department in the highest possible state of completeness and efficiency, we earnestly hope that this decision is not final, as some consider it, but that steps may yet be taken to remove what the whole body of veterinary surgeons may eventually consider as a most undeserved and unmitigated slight, if not an insult.

A full and fair recognition of the claims of the Army Veterinary Department is as necessary in the interests of the army and the country, as it is in those of the department itself. The day has gone by when these claims could be ignored with impunity.

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## "SHEEP-ROT" (*CACHEXIA ICTERICO VERMINOSA*).

BY PROFESSOR FRIEDBERGER, MUNICH VETERINARY SCHOOL.

*Translated from the "Deutsche Zeitschrift für Thiermedicin," by G. A. B.*

[Nothing having been done of late years in this country with regard to the investigation of the so-called "Sheep-Rot"—a disease which has been causing such terrible havoc among our flocks, and to which reference is made in our correspondence columns—we have much pleasure in publishing the following translation by a valued colleague.]

THIS disease prevailed in a flock of high-bred Merino-bred sheep in the months of December and January, and in a short time eight or ten animals died. At the *post-mortem* examination there was noticed a peculiar change in the liver, and a large quantity of fluid in the abdominal cavity. Therefore the owner wished to have the opinion of some competent person with regard to the malady, and consequently sent three of the most severely-affected animals to Professor Hahn.

At my colleague's wish I assisted him in the examination of these sheep, and from the symptoms they exhibited it was quite impossible to form a definite conclusion as to the nature of the disease from which they were suffering. We therefore destroyed one of the animals, in order than an autopsy might be made to assist us in our diagnosis. From this we decided that the malady was due to parasites.

The other two sheep were allowed to live for further examination, and were then destroyed.

### SHEEP, No. 1 (Ewe).

The following were the appearances this animal presented on January 31st :—Poor condition ; conjunctivæ very pale, and somewhat swollen ; ears warm ; extremities and muzzle cold ; skin white ; wool dry and easily pulled out. Heart-beats irregular and 160 per minute, the sounds being indistinguishable. Crural pulse small and quick. Temperature at the rectum, 40·3° Cent. ; respirations 36, but easily raised to more than 70 a minute ; Schneiderian membrane pale. A little sero-mucus discharge flowed from the nostrils. No cough. Percussion elicited a normal sound in all parts of the chest. The respiratory murmur was sharper than usual, and in places there were rhonchus sounds. The mucous membrane of the mouth was anæmic. The appetite and rumination were diminished. The hinder parts of the body, especially the sides and inferior region, were considerably enlarged ; the flanks were retracted. Palpation and percussion in different parts gave the idea that a large collection of fluid was present in the abdominal cavity. The movements of the rumen were distinctly audible. Pressure in the right hypochondrium produced indications of pain. The fæces were normal, no distomata being found in them. The urine was yellow, clear, strongly alkaline, and effervesced when acids were added to it ; it contained quantities of chlorides. The animal was weak and dull, did not care to move, and showed very little resistance to being handled. *It was bled to death, and the post-mortem examination was carried out at once, with the following results:—*

Cadaver emaciated, circumference of the abdomen being about one-third larger than normal; subcutaneous abdominal tissue very œdematous; muscular tissue very pale. About twelve quarts of fluid (in which floated some coagulated material) were taken from the abdominal cavity. The liver was adherent to the omentum; the peritoneum was also united to the abdominal walls in various parts by fibrous bands, which contained some freshly-coagulated blood-clots about the size of beans. The liver was tolerably firmly united to the diaphragm. The parietal portion of the peritoneum was slightly opaque and thickened, but easily removed from the underlying structures, and softer than normal.

The thoracic cavity contained about 100 cubic centimetres of a dark-yellow fluid; and the pericardial sac held about a tea-spoonful of clear fluid. The costal pleura was smooth and glistening. The superior mediastinal glands were about one-third larger than normal, œdematous, and highly pigmented; the bronchial glands were similarly affected. The visceral pleura was perfectly smooth, but that portion which covered the pericardium was somewhat reddened from imbibition of blood. The lungs were normal in size, collapsed, and contained air, except in various portions of the smaller lobe, which appeared to be splenified, with the bronchial tubes leading to these parts showing spindle-shaped and cylindrical distentions. The bronchial mucous membrane was perfectly normal, except at these distentions, where it was slightly thickened, and covered with a muco-purulent secretion. The muscular tissue of the heart was soft, but otherwise healthy. Nothing special was observed in the spleen or kidneys.

The mesenteric glands were enlarged, but irregularly so; those in connection with the stomach and small intestines were markedly so, and when cut they presented a moist bright surface, being inordinately juicy and darkly pigmented. The glands of the large intestines were less swollen, and presented their natural reddish-brown colour. No striking pathological changes were discovered in the stomach or intestinal canal; their contents were of a proper consistence; if anything, the mucous membrane was a little pale.

The principal changes were discovered in the liver, which was enlarged about three times its natural size, the right lobe being more affected than the left, the enlargement consisting more especially in thickness, which was easily seen by the truncated appearance of the border.

The lymph-glands situated near the hilus consisted of three highly-pigmented œdematous portions, varying in size from that of a bean to a pigeon's egg. The fibrous pseudo-membrane which covered the liver was thickest on the anterior surface, it was easily stripped off, and under it were found several examples of *Distoma hepaticum* about 5-8 mm. long; similar parasites were found in the peritoneal effusion. In some places the liver capsule was slightly cloudy, in others it was roughened. The surface of the liver was uneven, presenting several prominences, varying in size and colour; and I can compare it to nothing so much as porphyry, it having a dirty yellow to a yellowish-brown ground, upon which were irregularly distributed black-red or dark reddish-brown round lines or stellate spots, which gave one the idea that they were small subserous blood extravasations—or, at least, contained blood; they were about 1-2 cm. long, and 1-1·5 mm. broad. These changes formed part of the prominences, in whose centre a grey oval or elongated body could frequently be seen. On dividing the capsule, a bloody fluid (or one resembling blood) escaped from the surface of the liver, and with it the above-mentioned grey bodies, which appeared to be incompletely developed *Distomata hepaticum*, some being only 3 mm. long, and others twice that length. A great number of these parasites lay immediately under the serosa, and were surrounded by a very small quantity of blood; others seemed like points, and appeared to be placed perpendicularly in the subserous tissue,

with their end towards the serous membrane. When the serous membrane was carefully divided, it was possible to extract one of these *Distomata*, whose length measured 8-12 mm. One example only had pierced the membrane, and projected above the serosa, so that it was possible to extract it with the forceps. Its length was 6 mm., when the serous membrane and the parasites were removed from the surface, there were small cavities seen in the liver. On the anterior surface of the liver there were several prominent uneven spots about the size of a halfpenny, of a dirty orange colour, surrounded by a highly-injected ring. The gall-bladder was tolerably filled with a dark olive-green bile, in which neither parasites nor ova were found. The consistence of the liver resembled flesh, and was soft when cut, except in isolated places—especially in the left lobe, which was firm ; the hyperplasia of the connective tissue was easily seen microscopically. When cut, the parenchymatous tissue of the organ presented a greyish-brown colour, having in places a yellowish-red tint ; the central veins were distended by partially coagulated blood, and altogether it gave one the impression of stasis. There were also cavities filled with sanguineous contents, similar to those on the superficial surface of the liver, but less numerous ; they contained undeveloped *Distomata*. The yellowish-red parts proved on section to be deep-seated infarcts, which had already undergone degeneration and necrosis.* The mucous membrane of the bilary ducts was swollen and injected, and presented in places (especially at their smallest calibre) ecchymosed spots. Near the hilus a *Distoma* was here and there to be found. Towards their peripheral ends the ducts were thickened, and contained non-matured as well as numerous sexually-matured parasites. On opening the portal vein, we found a newly-formed thrombus about 4 cm. long, and 1 cm. thick in the left branch, upon which was a half-developed *Distoma ;* other examples were removed from neighbouring branches of the veins. The thrombus extended into some of the other branches toward the hilus. In the right branch of the portal vein small thrombi were also seen branching into the smaller lateral vessels.

SHEEP, No. 2.

The "*status præsens*" on the forenoon of January 31st, was as follows :—Body tolerably well nourished ; conjunctivæ yellow-red colour ; surface temperature equable ; muzzle dry and warm ; skin a rosy-red colour ; yelk secreted in small quantity ; wool moderately firm ; pulse 104, and full ; heart's beat easily felt on the left side, and sounds audible at same level. Internal temperature at rectum 40.2° C. ; respirations 22, but easily accelerated by the least excitement ; a slight serous discharge from nostrils ; appetite diminished ; rumination irregular, and only performed for a short time at long intervals. Circumference of abdomen normal ; peristaltic action audible ; no pain on pressure applied to the region of the liver. Fæces normal, but upon close examination a few Distomata were found. Urine dark yellow, clear, alkaline, and effervesced upon the addition of an acid ; non-albuminous ; contained chlorides, but no biliary colouring matter. The general appearance of the animal was still good, and its movements free.

In the evening the pulse was 96 ; temperature 40° C. ; respirations 36.

*Feb.* 1.—*Morning*, pulse 88, irregular ; temp. 39·7° C. ; resp. 22-30. Feeds a little better and ruminates ; livelier than on the previous days. Fæces normal. *Evening*, pulse 80-84 ; temp. 30·5° C. ; resp. 20.

*Feb.* 2.—*Morning*, pulse 84 ; temp. 41 3 ; resp. 38-48 ; but short and more superficial. Appetite worse. Rumination less frequent. Peristaltic action

* By the aid of the microscope, we were able to detect excessive regressive metamorphosis of the hepatic cells, and *detritus*, as well as some living rods of the *Bacterium termo*.

audible. Urine strongly acid, and containing no albumin or biliary colouring matters, but rich in phosphates. The animal is lazy and offers little resistance to being handled. *Evening*, pulse 32 ; temp. 41·7° C. ; resp. 36.

*Feb.* 3.—*Morning*, pulse 90; temp. 41·5° C. ; resp. 36. Seems much the same as yesterday ; pressure in the hypochondriac region gives no pain. The animal was becoming more emaciated, and we killed it by bleeding.

The autopsy showed the abdominal cavity to contain a few tea-spoonfuls of a slightly-reddened turbid watery fluid, which contained some small blood-clots and fibrinous coagula. Parietal layer of peritoneum normal. Specimens of the *Cysticercus tenuicollis* were in the mesentery. Thoracic cavity held about an ounce of slightly bloody fluid. Pleura natural Lymphatic glands of mediastinum slightly enlarged ; lungs of proper size, pale red, and pervious to air, with exception of a small portion about the size of a hazel-nut at the posterior end of the sharp border of the right posterior lobe, which was splenified. There were tolerably hard miliary nodules, consisting of a gelatinous material with calcareous concretions, in the subpleura and in parts of the parenchyma of the lungs. Pericardium normal, as was also the epi- and endo-cardium, with exception of some small ecchymosed spots about the size of pin-heads in the left ventricle. Lacteal glands enlarged, and when cut across and pressed a quantity of whitish-yellow turbid fluid oozed out. Nothing abnormal was detected in the stomach and intestines ; spleen normal, with the exception of a few sub-capsular hæmorrhagic spots the size of a pin's head ; kidneys the same ; bladder empty.

In this case the liver was the principal organ affected, and presented similar lesions to the last case. It was about one-third larger than it should be, the right lobe being slightly covered by a thin and easily removed fibrous coagulum ; but this was somewhat more abundant on the left lobe. Parasites were neither found in this pseudo-membrane nor in the effusion in the abdominal cavity. Lymphatic glands at the hilus were œdematous and swollen. Surface of liver irregular, uneven, and roughened ; left lobe particularly gritty and granular to the touch, of a brownish-red colour, flecked with spots of orange-red, dirty greenish-brown, and black-red ; capsule showed whitish-grey thickenings, which in places were slightly shrivelled, and beneath them were prominent calcareous concretions that projected beyond the surface of the organ—three being the size of a sixpence, the others the size of millet-seeds. The dark-red spots were due to blood extravasations under the serous covering (as in Sheep 1, but much more extensive) ; gall-bladder tolerably full ; the bile resembled tinct. iodidi in colour, and contained few of the parasites' egg. Liver tissue moderately firm, and crepitated when cut ; the left lobe was distinctly sclerosed. On the cut surface were observed lacunæ of various shapes and sizes, with smooth walls furnished with trabeculæ filled with a reddish-brown, often slightly grey pulp, in the centre of which an incompletely developed *Distoma* was usually found. The pulp-like contents were easily pressed out, and were found to consist of white and red blood corpuscles, with some fatty degenerated hepatic cells. The degenerated spots were surrounded by distended vessels, and small bright-red coloured blood effusions, the largest of which harboured some free particles, which were distinguished as remains of hepatic cells and connective-tissue fat. The connection between these degenerated spaces and the bile-ducts or the blood-vessels could not always be traced. On a tranverse section being made, some of the spaces were seen to be filled with a dirty olive-green or brown pulp, tinged with green matter, which could be pressed out in clots resembling the shape of the vessels. In these, we also detected some young *Distomata* about 4-5 mm. long, as well as white and a few red blood corpuscles and *detritus*, but very little remains of hepatic cells (in some places we saw collections of a granular rusty-yellow pigment). There can

be no doubt that these spots were enlarged, degenerated, perforated, and destroyed bile-ducts. When the hepatic duct was opened at its entrance into the duodenum, we found two sexually-mature parasites ; others were also found in the duct itself. The mucous membrane presented all the appearance of being affected with a violent desquamative purulent catarrh ; in places it was studded with hæmorrhagic spots, and the enormously thickened walls were in patches surrounded by large extravasations of blood. Fully matured flukes were rarely to be met with, except at the hilus and periphery of the liver, but immature ones were tolerably plentiful, though not situated under the serosa, as in Sheep 1. Several of the middle-sized hepatic ducts were distended with nests of three or four flukes, but there were no signs of rupture of the walls or degeneration of the surrounding tissue. Some of the peripheral branches of the vena portæ, especially of the left lobe, were plugged with thrombi, which projected in a conical manner into the larger branches, but no parasites could be discovered here.

The hepatic cells were highly granular, and had undergone fatty infiltration and degeneration. Heaps of mixed cells, fat globules, and fine granular *detritus* was seen. The connective tissue had undergone various grades of hypertrophy.

*(To be continued.)*

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## HUMAN AND ANIMAL VARIOLÆ: A STUDY IN COMPARATIVE PATHOLOGY.*

BY GEORGE FLEMING, F.R.C.V.S., ARMY VETERINARY INSPECTOR.

THE recent conference held in London on Animal Vaccination will not have been without a useful result, if it has been the means of not only drawing attention to this particular subject, but also to the very meagre knowledge we seem to possess with regard to Variola in animals, and, indeed, of all animal disorders which are communicable to mankind, and *vice versâ*. The discussions which took place at the meetings of the conference afforded another proof of the necessity of instituting what I have for years maintained should form a branch of medical study—a chair of Comparative Pathology at each of our medical schools. Surely a knowledge of animal diseases, in their relation to those of our own species, is of far more moment to the surgeon or physician in the practice of his profession, than an acquaintance with zoology or comparative anatomy. Such chairs are established in nearly all, if not all, Continental medical schools, in which their value has long been recognised. Why is it, then, that we are so slow or so unwilling to adopt what is so manifestly and so urgently required in order to complete the student's education, and to render him a more useful and enlightened member of society ?

From the opinions expressed at the conference, as well as elsewhere, I gather that the view is largely entertained among medical men in this country, that human and bovine Variola, or Vaccinia, are one and the same disease : the latter being dependent for its origin and maintenance upon the former, though undergoing a certain and special modification in the passage of its virus through the organism of the ox ; so that, when re-transplanted in the human species, it is no longer Small-pox, though it offers protection, partially or wholly, permanently or temporarily, against an attack of that malady.

It would also appear to have been accepted by those present at the conference, that there are only two distinct kinds of Variola—one affecting man, and

* Reprinted from the *Lancet* for January 31st.

the other the sheep. And one opponent of animal vaccination, in dwelling upon the dangers likely to attend that operation, pointed out the existence of several diseases which, he asserted, bovines are liable to, and which he would lead us to infer might be communicated to those vaccinated direct from the calf. Among the diseases he enumerated were Contagious Pleuro-pneumonia, Anthrax, Glanders, certain disorders due to helminths, and "Entozootic Asthma."

Now, without at present claiming to be a supporter of animal vaccination, I may as well state that the apprehended danger from these disorders is more or less purely imaginary. Contagious Pleuro-pneumonia is peculiar to cattle, and cannot be transmitted in any form to other species, not even by direct inoculation of its morbid products; Glanders is not a bovine disease, and all attempts to convey it to the ox tribe have invariably failed; Anthrax runs its course too rapidly, and is too marked a disease to be considered in connection with animal vaccination; the worm disorders have no relation to the subject under discussion; while as for "Entozootic Asthma," why, I never heard of it before, and I fancy nobody else, so that it may also be dismissed as unworthy of consideration. Candidly speaking, if I anticipated any danger in animal vaccination, from the presence of constitutional disease in the vaccinated calf—which I do not at present—I would rather be inclined to look upon the existence of Tuberculosis with some suspicion; but this serious malady the speaker did not refer to. There is, however, no evidence that it can be conveyed to mankind by retro-vaccination; and, to my mind, the risk is so infinitesimal, considering that the calf is so rarely affected with the disease, at least in an active form, that I think it may not be taken into account just now.

Of infinitely greater importance is the relationship between human Small-pox and Cow-pox, which was treated as a merely collateral subject at the conference, but was, nevertheless, made the occasion for some strong opinions being expressed as to the absolute identity of the two maladies. The solution of the problem as to whether Small-pox and Cow-pox are one and the same disease, modified only in their manifestations by differences in the organism of man and the ox, or whether they are distinct and independent disorders, having only a family or generic resemblance, well deserves the most serious efforts; constituting, as it does, a question of the very highest scientific and practical interest, and one about which there should be nothing speculative. Its practical aspect more particularly invites examination, for if it be demonstrated that the two are identical, the Cow-pox, being derived from Small-pox, then there is no occasion to hesitate as to the selection of vaccine lymph; for we might, without compunction, take that which is directly elaborated in cows through inoculation with the Small-pox matter of man, and thus save all the search and precautions at present imposed upon us in order to obtain a vaccine fluid which shall be innocuous, and at the same time sufficiently potent to afford protection from Variola. But if, on the contrary, the Small-pox communicated to the cow retains all its characters, and when again transferred to mankind merely reproduces itself in its dangerous, general eruptive and highly infectious form, then recourse to variolo-vaccination would be a serious and reprehensible step, and one which should be opposed. Or if the Small-pox virus, in passing through the cow, should still retain its Variola-producing attributes, but yet become so subdued as to be as harmless, and still as effective as vaccine, ought it to take the place of the latter altogether, or should it be employed simply as an auxiliary? These questions have been asked before, and I venture to ask them again, as a reply to them is of the greatest moment at this particular time, not only in regard to Small-pox, but to other virulent affections. For if, notwithstanding the apparent differences in their characters, the human

and bovine diseases are the same in nature, the virus only being beneficially modified or transformed by transference from the one creature to the other, it gives us reason to hope that the virulent principle of other contagious scourges which only attack once in a lifetime, may be similarly attenuated by emigration from one species of animal to another, and still retain its protective influence. But if the human and the cow disease are due to a different virus, and the one has power to neutralise the other, the reciprocal neutralisation being greatly to the advantage of the creatures concerned, then also there is good reason for hoping that with other contagious maladies of the same, or even a different type, there may be discovered a similar means of destroying their germinative power.

Notwithstanding the immense importance of the question, the long time that has elapsed since vaccination was introduced, the multitude of works upon the diseases, and the great opportunities that have been afforded for clinical and experimental observation, it is indeed astonishing to find opinions still divided on the subject of human and animal Variolæ and their relationship. Strange it is to note doubt and hesitation, and unfruitful discussions as to the nature, advantages, and dangers of vaccination, when we reflect that it has been practised for ninety years, and is universally adopted all over the world as a prophylactic against one of the direst of the pestilences which haunt the human family.

But so it is ; and, as before observed, the tendency among medical men, at least in this country, appears to be in favour of Small-pox and Cow-pox being due to one and the same virus ; in opposition to the Jennerian doctrine, that the Cow-pox was derived from Horse-pox, and had none but an antagonistic relationship to human Variola. Their belief seems to be founded on the reports of certain experiments performed by four or five persons (Gassner, Thiele, Sonderland, Badcock, Ceely), in which positive results were obtained some forty or fifty years ago, and on accounts of a few instances in which Small-pox was said to have been communicated from sick people to animals. Jenner, according to this opinion, was mistaken ; his Cow-pox was not derived from "greasy-legged" horses, but from the Small-pox-stricken people who went about and handled the milch cows, and so infected or inoculated them. It follows that only cows were (and are now) affected ; that Cow-pox was much more prevalent in those days than now, because Small-pox was more prevalent ; that only mankind and sheep have a distinct Variola of their own, for the simple reason that those who entertain this opinion never saw or heard of any other species being affected with Variola ; that failures in recent attempts to produce Cow-pox, by inoculating cattle with Small-pox virus, and the production of Small-pox when the matter of the eruption was transferred from the cows to children, were due to the human virus being merely deposited in a little pouch in the animal's skin, where it did not undergo the supposed modification ; and that, though all recent experimenters have failed in developing Cow-pox from Small-pox, yet at the period mentioned it was accomplished without difficulty.

Deeply impressed with the vast importance of arriving at the truth in such a grave question, I have for many years devoted much attention to it, and have already done what in me lay to settle it : at least so far as the Variolæ of animals are concerned, as will be seen on referring to my work on "Veterinary Sanitary Science and Police" (vol. ii., p. 28) ; and I will now venture to dispute every one of the arguments brought forward to prove that human Variola and Cow-pox are due to the same virus, or are the same disease ; or that there are only Small-pox and Sheep-pox as distinct Variolæ. With regard to animals, I may at once state that I believe every species has its own independent and particular kind of Variola, and I am unable to understand why man and the sheep should alone have the unhappy privilege of being

the special subjects of different forms, and this privilege be denied to all the other creatures.

Whether these forms may have been originally derived from a common or primitive source or type, I will not now stop to inquire ; but that they exist and compose a group of diseases rather than one malady, cannot be matter for doubt. That they more or less widely differ from each other, that in each species each form has a special character, and though that which is particular to one species may be transmitted to another species, yet the Variola of this species need be scarcely a subject for dispute ; while the fact that their differences are marked, not only with regard to their particular features, but also as to their capability of transference to other species, and their antagonism to each other, has been clearly demonstrated. Admitting that which I shall presently attempt to prove, that the cow has its own Variola, we know that when this is communicated to man it does not produce Small-pox, though it protects from it. The Sheep-pox has been inoculated on man by many experimenters—among others, by Marchalli, Sacco, Voison, and Hering, but only a small localised group of pustules, quite unlike the eruption of ovine Variola, has appeared at the seat of inoculation, and no protection from Small-pox or Vaccinia has been conferred. Neither human Variola or yet Vaccinia will give rise to Sheep-pox, neither will their inoculation protect the sheep from its own Variola. Horse-pox is communicable to the cow and mankind, and protects them from their Variolæ, as well as the human species from Vaccinia, while vaccination protects the horse from its Pox. As we shall see immediately, though the virus of human Small-pox, when deposited in the skin of the cow, does give rise to a local papulation—often very trifling, exceptionally very marked—yet this is not the regular eruption of Cow-pox, either in its appearance or course, and it does not prevent the cow being successfully vaccinated at the same time, though it appears to destroy the aptitude to receive Vaccinia ; while in two or three transmissions through the bovine species it becomes altogether impotent. The same results are observed in the horse, which, however, appears to receive the virus of human Small-pox more readily, and to exhibit more marked local phenomena than the ox ; while this inoculation also protects it partially, if not entirely, from the action of vaccine virus, which it otherwise so readily receives. As in the ox likewise, the Small-pox virus soon loses its potency in being carried from one animal to another—it cannot be cultivated in them ; and experiment has demonstrated, that no more in the organism of the horse than in that of the ox can human Variola be transmuted, but that after passing through the bodies of solipeds, and again transferred to man, it has lost none of its characteristic features.

Cow-pox can be very readily transferred to man, the ox, horse, and goat, the first three showing an equal aptitude for its reception ; in them also the transmission of the disease is indefinite—*i.e.*, the virus may be cultivated, without impairment, for a limitless number of generations, and it confers immunity against the Variola of man and the horse, while the ox itself is protected. But while vaccination only produces in man and the ox a local and limited eruption, in the horse it often produces a startling pustular exanthem, which, in character and seat, differs in nothing from natural Horse-pox. Another peculiarity in the action of the vaccine virus in the horse is its tendency to produce this vaccinal eruption, and at the same time to confer immunity, when introduced directly into the lymphatics or blood-vessels ; while in the ox it does neither under this condition—all circumstances which would lend support to the opinion of Jenner, that the horse is really the true source of natural Vaccinia.

Vaccination in the dog usually only produces small red nodules at the punctures, but nothing at all resembling the vaccinal eruption. It is the

same with the pig. In the sheep a small papule generally forms at the seat of inoculation, with rarely a little vesicle that rapidly becomes encrusted. Re-vaccination from this to calves gives negative results.

Not only in their special characters do the Variolæ of man and animals differ, but also in their apparent mode of extension. Human Variola and Sheep-pox differ widely from each other in some respects, particularly in their not acting antagonistically, and in the appearance of the eruption, but they are identical so far as their diffusion is concerned. They are both infectious and contagious, and can be transmitted by fomites, as well as by actual contact; while their virus possesses a vital resistance somewhat remarkable. Cow-pox, Horse-pox, and the Variolæ of other animals would appear to depend for their dissemination upon their contagious properties only, and their virus readily becomes deteriorated.

There are other peculiarities in the Variolæ of man and animals which still further differentiate them, but these I shall not allude to here; so pass on to the consideration of the far more pressing question as to the identity of Small-pox and Cow-pox, and an examination of the arguments brought forward in support of this identity. But before doing so, I may as well confess that I do not for a moment hold with the abiogenetic or "spontaneous" origin of Variola either in man or beast, and am prepared to maintain that whenever and wherever, and in whatever species the disease manifests itself, it is always due to its own special contagium, no matter how this may be conveyed.

*(To be continued.)*

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## ABORTION IN COWS.

BY H. V. STOCKFLETH, PROFESSOR AT THE COPENHAGEN VETERINARY SCHOOL.*

AFTER reading the interesting article by Professor Frank, published in this journal (*Deutsche Zeitschrift*, etc.), upon the contagious nature of abortion in cows, I thought the following remarks would be interesting. Although I am aware that it is difficult to give a satisfactory explanation of this accident, and that it is easy for one to launch out upon the very treacherous paths of supposition, yet I do not think there are sufficient reasons to prevent one from stating his own views. This, with the consolation that I am not the only one who is liable to mistakes, and possessed of the conviction that, by indefatigable inquiry (in which every one should take his share), leads me to hope that we shall finally arrive at an amicable decision upon this question.

Abortion was, and is still, very much feared by farmers; but they, unlike veterinarians, do not distinguish any difference between abortion which takes place before two-thirds of the usual period of gestation is over, in which case the young are always dead (*abortion*), and that which takes place after this period, in which the fœtus may be so far developed that it is in a condition to be born alive, and to live (*premature birth*). This division, however, is without practical value, and we find that both accidents are due to the same causes; for when one occurs in a cowshed, we generally find the other takes place also among other animals in the same shed.

We often find that "slipping calf" is effected in a very short space of time, and that it happens without any premonitory signs. As a rule, however, we generally find the *labia vulvæ* swell, the tail is raised, and the cow commences to strain, and in a few minutes the young one is found lying behind

* Translated from the *Deutsche Zeitschrift für Thiermedicin*, by G. A. B.

her. If the fœtal membranes are expelled with the fœtus, or shortly afterwards, all will be well; but if they are retained, they may cause more or less disturbance through decomposition. At other times the cow suffers considerable disturbance from non-relaxation of the external generative passages and os uteri, etc., which leads to retention of the fœtus. In such cases the cow will require assistance, which, as a rule, is not difficult to render. I have found several times a small fœtus held quite firmly in the os uteri, and I once found, in a cow that had shown signs of calving for fourteen days, a large fœtus fixed tightly in the vagina.

Many days, and even weeks, may elapse between the separate cases of abortion in the same herd, but it often occurs in several animals at the same time. Eletti* reports a case where eleven cows aborted out of fifty-five in one day. The casual appearance of any febrile disease may cause abortion, as I had occasion to experience in Copenhagen in 1852 ; for instance, it frequently follows Foot-and-Mouth Disease. But cases occur more often, and isolated cases follow each other more rapidly now than was ever experienced from that disease. It may so severely attack a herd that natural births become the exception instead of the rule, and when such cases do occur they often succeed each other for several years.

We have no fixed rule to guide us as to the time the cow may be expected to abort. Young cows are generally the first to abort, when they are from three to four months gone ; the older ones aborting about the seventh or eighth month of gestation. Once a cow has aborted, she is very liable to abort her next calf also, and we have instances where cows have "slipped their calves" several times in succession, and even three times in the course of the year.† If a cow has aborted several times in succession, but received good attention, food, etc., in the intermediate period, the rule is that each abortion takes place later than that preceding it. Zundel says upon the matter, that if a cow carries her first calf six months, she would probably retain the next to seven or eight months if she received better nourishment, etc., than before, and the third would probably be delivered at the natural time, or very close to it. The truthfulness of this view is, however, very doubtful, for abortion is not exclusively due to the modes and customs of feeding, etc.

Abortion may occur under all circumstances—in the meadow or stall, in young or old, and in emaciated or well-fed cows ; it may be either confined to one farm, or to one neighbourhood, or it may disseminate itself far and wide. In this part of the world, it is generally confined to one or more farms, in which several years may pass without a case occurring, and then it commences again with its former virulence. It does, however, under some unfavourable circumstances become more extensive ; for instance, in the cold, wet year of 1852 it was very prevalent in South Germany, and in 1872 it was quite common in eastern and other Prussian provinces.

The great loss which attends abortion is that of the milk. If no other unfavourable symptom appears, the cow may soon be put to the bull again ; but if the fœtal membranes have not been got rid of, the cow will, as already mentioned, become affected from their decomposition, and the desire for the bull will not appear before they are all expelled, and the uterus free from any decomposed and dead materials. The fertility of the cow may be lost, in which case she loses flesh, the milk secretion ceases, and she often pines away and dies ; but if animals recover after the membranes, etc., were retained, they are very likely, for a time at least, to abort again, and in this

* Repertorium der Thierheilkunde von E. Hering, 22-34, nach Giornale di Veterinario. Turin, 1860.

† Ueber ein enzootishes Verwerfen von Dr. Zundel. Tidskrift for Veterinairmedicin of Fr. Sundberg. Stockholm, 1872.

way lead to great loss of money and time, and cause great trouble to their owners.

The organic union between fœtus and mother generally ceases some time before the symptoms of abortion show themselves ; therefore, when a cow shows premature labour pains, we may generally say the fœtus has been dead for some time ; and therefore we need never hesitate in assisting, rather than preventing, the expulsion of the fœtus and its membranes. From this it will be seen that all our endeavours must be directed to prevent the causes of abortion ; but before this can be brought about, we have first to solve the difficult question, What are the causes ? This is very difficult to answer, inasmuch as it is next to impossible to prove the precise cause in any one case. Still, by seeking the foundations which have given rise to the doubts, prejudices, susperstitions, etc., concerning abortion, and by noting all causes which can or are likely to cause abortion, we shall be starting with knowledge which will enable us to arrive at some definite conclusions. In the following I shall endeavour to point this out to you, without, however, claiming that I have repeated all which is known upon the subject ; and hoping that others will also render their assistance in solving this question, for opinions and experience from various sources are always beneficial in elucidating truth in such matters.

We will commence with what has received but little attention—viz., the examination of the peculiar relations, in the cow itself, which favour abortion.

It is not so very singular that abortion takes place in milch cows, if we consider the frequency with which they give birth to young, viz., one every year, whilst in other animals this is exceptional—but besides giving birth to a calf, it is also requisite that they should give a large quantity of milk—or, perhaps to put it better, in order to have a cow which is always in profit (milking) we seek to have her calve regularly once a year. We must look upon this circumstance of milking pregnant cows to be a cause of abortion, since the uterus and mamma are normally so closely connected, that when one is active the other is inactive and *vice versâ*. In animals whose gestation is short, such as dogs, the uterus remains dormant whilst the animal is suckling her young, and only renews its activity when the young are so far advanced that they can live independent of the mother and lactation has ceased. On the other hand, when the period of pregnancy is of long duration, as in the cow, mare, etc., we find that œstrum returns soon after giving birth to their young. The cow, however, is generally allowed the bull three months after calving, and lactation generally ceases about six months after becoming pregnant, and the young has to seek other means of sustenance. The glands gradually become inactive, and recommence their function shortly before giving birth to the next calf. This natural process is completely altered in dairy cows, for we find the calf removed from the mother directly after birth, and commence giving the cow food with the object of obtaining a larger quantity of milk, and put her to the bull as soon as possible, continuing to milk her so long as the gland secretes. In this manner there is a struggle set up between the function of the mamma and uterus; the function of the latter is thus artificially held in check, and abortion is the result. The zealous attempt to develop the milk secretion to the highest degree causes a complete change in the manner of living, and the animal is used for breeding purposes long before it has developed itself. It is a generally known fact that we allow the cow to calve a second time before she has arrived at three years old ; therefore, it is evident that the first calf must have an influence upon the mother's growth, and what is still worse is, during the second pregnancy the young mother is artificially fed and the secretion

of milk forced as much as possible, whilst she is still growing, as well as having to nourish the fœtus in her uterus. It can be easily understood that the fœtus, under such circumstances, is not sufficiently nourished, and therefore abortion is the consequence, and as a rule whilst the embryo is still young, the cow having been only a short time pregnant for the second time.

*(To be continued.)*

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## SIR FREDERICK FITZWYGRAM'S ANNUAL PRIZES.

THE examination is intended to take place in the week after the Easter examination of the R.C.V.S., 1880.

The competition is open only to members of R.C.V.S. who have obtained their diploma within twenty-five months of the date of the Examinations, and who passed with "great" or "very great credit."

The prizes are three in number. The first is of the value of £50; the second, £30; the third, £20.

The competition will consist—1st, of a written, and 2nd, of a practical and *viva vôce* examination, on subjects pertaining to veterinary science.

1,200 marks will be assigned to the first part, and 600 marks to the second part.

In the first part the marks will be assigned as under :—

Anatomy, 300; Physiology, 300; Pathology, 300; Chemistry, 100; Botany, 75; and Materia Medica, 125.

The time allowed for the written examination will be as under :—

Anatomy, 3 hours; Physiology, 3 hours; Pathology, 3 hours; Chemistry, 1½ hours; Materia Medica, 1½ hours; Botany, 1½ hours.

In the second part the marks will be assigned as under :—

Diagnosis of Disease, 200; Shoeing, 100; Examination for Soundness, 200; Selection of Horses for Specific Purposes, 100.

A competitor failing to obtain two-thirds of marks assigned to *any* of the papers in the written examination, will be excluded from the second on *viva vôce* examination. Two-thirds of the marks assigned to each subject in the second part must also be obtained.

The names of intending competitors are to be forwarded to the Secretary of the Royal College of Veterinary Surgeons, 10, Red Lion Square, at least one week before the date of competition.

The first portion of the examination will take place in London for the Royal Veterinary College, and in Edinburgh and Glasgow for the Scotch schools.

The five best competitors in the first or written examination will be selected for further competition in the practical or *viva vôce* test.

This further competition will be held in Edinburgh this year, or in such other place as may be most convenient to the majority of the selected competitors, and at such time as may be notified.

The donor will pay the railway fares of each of the selected competitors, to and from the place at which the practical examination is held.

The exact date will be notified as soon as the Scotch examinations are fixed.

Further particulars can be obtained from the Secretary R.C.V.S.

## FELLOWS OF THE ROYAL COLLEGE OF VETERINARY SURGEONS.

IT has been suggested that an annual meeting of Fellows should be held, as is the custom in similar institutions, to be followed by a dinner. We are pleased to hear a movement has already been made, and that it is intended to hold the same in the middle of this month (*March*), at one of the most central metropolitan hotels, of which due notice will be given to each Fellow by circular. We need scarcely add the movement has our most hearty approval and support. We hope to see a good gathering. Fellows who may wish to signify their approval of the same, can do so by addressing "Fellows' Dinner Mover," care of publishers of this Journal.

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# Proceedings of Veterinary Medical Societies, etc.

## CENTRAL VETERINARY MEDICAL SOCIETY.

AT an ordinary meeting held at 10, Red Lion Square, W.C., on December 4th, the President, H. T. Batt, Esq., in the chair—the SECRETARY brought forward some coated horse-balls, left by Mr. T. G. Batt at the previous meeting. The medicine was contained in a double capsule, one part covering the other, and a slip of paper bound round the middle retaining the two halves *in situ*. They were considered an improvement on the usual system of paper wrapping.

The SECRETARY showed the bladder and enlarged prostrate glands of a collie dog, which had been left with him for several weeks as a sort of pensioner. The dog was very aged, and when first received had a very rough coarse coat, with a large patch of bare shiny skin on the back, which the owner hoped might be covered with hair by treatment. The animal gradually wasted away, his appetite remaining good to the last. He was the subject of chronic kidney disease, the urine when passed being yellow and so gelatinous that it passed away continuous, like a cord, the dog frequently losing his balance when voiding it, from the duration of the act. This condition was modified at first, and for about three weeks the urine becoming nearly fluid and browner, by doses of Potassic Iodide given in the drinking water; but it then became as bad as ever. The whole gland after death was found spongy, and copiously discharging thick purulent fluid into the bladder. The kidneys were larger than normal, the right being about double, and both were enveloped in a glistening white covering. As Mr. Moore had a case to bring forward relating to renal disease and calculi in the bladder, also of a dog, he thought this was a good opportunity of submitting his case.

Mr. HUNTING and Mr. STEEL both had had a similar case; in Mr. Steel's the glands were not so spongy.

Mr. FURNIVALL recently had a similar case, but there was retention of urine, and the animal cried out with pain while attempting to relieve himself. Death ensued in about eleven days.

Mr. T. MOORE exhibited some morbid specimens, consisting of the kidneys, bladder, and generative organs of a Scotch terrier bitch, together with some cystic calculi. He believed it was the most extraordinary case of the kind ever recorded in canine pathology. He was first consulted in the early part of June, when a stone about the size of a pea was voided with the urine. In August, seventeen stones were passed, and another single one in October. On November 4th, symptoms of acute suffering were shown, and the patient died next day, after remaining in a comatose state for about four hours. Au-

topsy revealed enlargement and softening of the left kidney, the pelvis of which contained a stone about the size of a pea. The right kidney was considerably less than natural, and also contained a small stone. The bladder, which was somewhat thickened, and eroded on its mucous surface, was very much distended and completely filled with calculi of various sizes, numbering 275, and weighing 365 grains. The two larger weighed 60 grains each. He had not had them analyzed, but surmised they were phosphatic. The healthy condition of the ureters led him to think that they had been formed in the bladder after passing from the kidneys in minute particles. It was curious that the bitch, which was ten years old, had known no symptoms before June, and up to November 4th was in apparant good health, with the exceptions that when out of doors he would frequently assume the micturating position.

Mr. MOORE also brought forward the thermo-cautery (Paquelin's), and demonstrated its use. He said it would be in the remembrance of some present that he had submitted it to the society a few years ago, when its merits were discussed, and published in the Journal, with the proceedings of the meeting. He had not heard of its adoption till he read a notice lately that it was described as a "*new*" method of firing, etc. The Fellows could judge of its easy application ; its cost was less now than then, and he had used it himself since then.

Mr. SHEATHER could testify to the practical utility of the instrument, having used it ever since the occasion Mr. Moore referred to, when he obtained one. He found the platinum blade gave a good sear, deep or shallow at will, and the burnt skin did not adhere to it : the lines could also be made very close, if required.

The instrument received warm approval from those present, and it was intimated that a proposal would be made at the next Council meeting to purchase two or more of them for the use of the Fellows.

Mr. HUNTING then introduced the subject of "Colic" as regards treatment. He defined Colic as a condition dependent on pain in the bowels and unaccompanied with inflammation, but with constipation from fæces acting as an irritant. There were two opposite courses pursued to combat it—the sedative and the stimulant treatment. He treated his cases first with a stimulant, which frequently gave an amount of functional activity to the bowels, often sufficient to remove the obstruction ; failing these mild efforts, he employed aloes and mechanical means to obtain a passage, such as enemas, and in some cases explored the rectum.

Mr. FURNIVALL observed that in chlorodyne, combined with turpentine and linseed oil, he had found for a long period of years a never-failing remedy.

Mr. BANHAM was in favour of linseed-oil, having noticed in certain *post-mortem* examinations where it had been employed, that though the colon, etc., might be firmly packed with food-stuffs, the oil given had mingled with it, and appeared to be mechanically softening it. He advocated "back-raking" also.

Mr. ROWE employed Tincture of Aconite, or the usual carminative agents, and invariably emptied the rectum, occasionally injecting soap and warm water, and submitted the animals to a gallop, with abdominal friction and warm clothing afterwards : when Diaphoresis set in, he found they did well.

The PRESIDENT advocated Chloral, with Nitric Ether and Liq. Amm. Acet. ʒj.

The subject was then adjourned.

Mr. HENRY SURMON, of St. John Street, Clerkenwell, was duly elected a Fellow.

Mr. FURNIVALL intimated his intention of bringing forward the subject

of inoculation of cattle and horses as a means of prevention and cure of certain contagious diseases, notably Pleuro-pneumonia, Glanders and Farcy, at the next meeting.

The meeting then terminated. *Present*, nineteen Fellows and one visitor.

JAMES ROWE, *Hon. Sec.*

An ordinary meeting was held January 15th, the President, H. T. Batt, in the chair.

Mr. HALL BROWN forwarded a *post-mortem* specimen of diseased liver which had been taken from a horse that had been destroyed for broken knees. The animal had been used by a butcher, at Woodford, for six years, and always appeared to be in good health and excellent condition. He also forwarded two enormous kidneys taken from a well-bred horse 15-2 hands high that had been passing blood for a week before it was destroyed.

The SECRETARY drew attention to a hypodermic syringe which he considered extremely cheap, only costing 6s. 6d.

Mr. FURNIVALL exhibited coated horse-balls which he had used for some years ; they were prepared for him, and were a saving of labour and cost.

Mr. HUNTING then resumed the subject of Colic, adjourned from the last meeting. He said one thing had occurred to him, and that was, that cold water was frequently looked upon as a cause of Colic ; he believed that in all cases of Colic there was a tendency to constipation, but he thought the exciting cause of cold water alone would not produce Colic ; it only affected a horse having an empty stomach for a long time. The multiplication of drinking fountains was strong proof that water *alone* did not produce Colic ; water was an exciting cause, but not *the cause* of indigestion. He wondered no one had as yet given a name for this disease in a horse; there was a disease very analagous to it in the human subject, he referred to Sycosis, which would be a very good term for the disease in the horse.

Mr. GERRARD said his ideas regarding Colic were very much in unison with those expressed by Mr. Hunting, although he had anticipated a rather different system of treatment from him, as one who had sat so long at the feet of Gamaliel—one of the great masters of this subject. He had fully expected a philosophical disquisition on the action of aloes in the treatment of Colic ; for there was no subject that Mr. Gamgee wrote so dogmatically upon as the action of aloes in the treatment of Colic, together with the use of his enema funnel, which he regarded as capable of curing any case of Colic. Indeed, he mentions that he had not lost a case for some thirty years. And those pursuing the stimulant or sedative mode of treatment he rather twits with treating the symptoms of the disease, instead of the disease itself. Colic being essentially a spasmodic contraction of the muscular coats of the intestines, induced by some irritant either in the shape of food or water, the most reasonable mode of treatment was certainly to remove the irritant ; but he (Mr. Gerrard) found that if you depended altogether on removing the irritant by purgation you frequently lost your case, from the violence of the symptoms, unless mitigated by a sedative. He could not say, however, that he had been so successful as Mr. Furnivall, even although he had tried his prescription since last night of meeting ; for he lost the first case he tried it upon, only it turned out a twisted bowel, so that it was scarcely a fair test. Besides, the administration of chlorodyne to the horse, if it has to be often repeated, is rather an expensive medicine, and this is against its general adoption, unless we could always depend upon its action. He had had the greatest success by the adoption of the stimulant and anodyne treatment, followed up by a dose of aloes if the state of the bowels and other conditions of the patient as to food and water demanded it.

One great objection to the treatment of Colic by aloes was that you

required the patient to be off work for a few days : whereas by the stimulant or sedative treatment you can usually, in ordinary cases, get him fit for work in a few hours, which is a matter of very much importance to your clients frequently.

With regard to the production of Colic by the drinking of cold water, he had frequently found that horses in certain agricultural districts were often the victims of it, from being worked too long without food or water, and allowed to drink at the troughs in the yard when brought in. In Lincolnshire this was frequently found to be the cause of Colic, and even Enteritis, and this from the fact that they worked their horses such long hours, frequently from seven in the morning until three in the afternoon without food or water ; whereas in Essex, where a different system of feeding and working prevails, Colic is not so much met with. Under certain conditions of the stomach and intestines, cold water, or even too greedy feeding after long fasting, may produce Colic ; and this pathological fact is strictly in keeping with the anatomy and physiology of the stomach and bowels.

He regarded public drinking-troughs in our large towns, about which something was said in this discussion, as either a very great boon or a great nuisance. Looking at them from a philanthropic point of view, they relieve the sufferings of the dumb companions of our toil by frequently allaying their thirst ; but on the other hand, he was certain they were one of the greatest means of spreading contagious diseases, such as Glanders, etc., so that their good is neutralised by their evil, and they become, therefore, a positive nuisance. He stated that several cases of this sort had lately come under his notice which were decidedly attributable to this cause. He thought if an opinion were expressed by this Society it might have some effect upon the public mind by warning them of their danger. He thanked Mr. Hunting for bringing the matter before them and giving them some light upon it.

Mr. HUNTING explained that he always treated his cases first with a stimulant, which frequently gives an amount of functional activity to the bowels ; the removal of the obstruction was the object to be aimed at ; if he could obtain such by the mild treatment he did so, if not he tried the other treatment.

The evening being well advanced, and Mr. Furnivall's subject a lengthy one, it was deferred to the next meeting, and the proceedings terminated.

Present, twelve Fellows and five visitors. J. ROWE, *Secretary.*

## NORFOLK AND EASTERN COUNTIES VETERINARY MEDICAL ASSOCIATION.

THE half-yearly meeting of the members was held at the Norfolk Hotel, Norwich, on February 4th. A. H. Santy, Esq., F.R.C.V.S., in the chair. The sister profession was represented by M. Beverley, Esq., M.D. ; Charles Williams, Esq., F.R.C.S. ; and R. J. Mills, Esq., M.R.C.S. Geo. Fleming, Esq., F.R.C.V.S. ; and Thos. Greaves, Esq., F.R.C.V.S., also honoured the meeting with their company, and among the members present were, Messrs. Bower, Whincop, Shipley, Overed, Gooch, Hammond, Smith, Newson, Ellis, Rattee, Butters, Howard, Buckingham, Low, and Auger ; and Messrs. Santy, junr., Rattee, junr., and Hammond, junr., were present as visitors.

Letters were read from Sir F. Fitzwygram, Bart., Prof. Pritchard, and others, regretting their inability to attend. The minutes of the last meeting having been read and confirmed, the auditors presented their report, which showed a balance in favour of the Association of £18 2s. 10d. The Hon. Sec. read a communication from the Lancashire Veterinary Medical Association, respecting the ensuing election of members of the Council of the R.C.V.S., and

after considerable discussion it was resolved to support the re-election of the retiring members.

In accordance with a resolution passed at the last meeting, the instruments, etc., purchased at the expense of the Association, for the use of the members, were laid on the table for inspection ; these included Miles' casting tackle, ecraseur, spreaders, etc., also Thompson's tooth shears, and Santy's tooth forceps and lever (kindly presented), the use and merits of which were freely discussed, especially the ecraseur, and instances were named in which it was highly spoken of in the castration of horses, the removal of tumours, etc. ; and Mr. Fleming mentioned a very interesting case in which he successfully removed (without hæmorrhage) a tumour from the inguinal region of a mare, which weighed 4½ lbs. He recommended in all such cases the skin to be first incised, and the tumour (as far as practicable) to be separated from its superficial attachments before its removal was attempted, which should be done slowly and deliberately, as hæmorrhage would be less likely to follow the operation. The President then requested Mr. Fleming to read his paper on "Tuberculosis from a Sanitary and Pathological Point of View," which important subject was treated by the essayist in a most scientific and exhaustive manner, calculated very materially to assist us in arriving at correct conclusions respecting the true pathology of this hitherto somewhat obscure malady, and also its great importance to the public at large, viewed as a sanitary question.

The conclusions to be drawn from the facts contained in the paper, Mr. Fleming left to the consideration of the Association, but of their importance, to his mind, there could be but one opinion. [Mr. Fleming in the course of reading his paper was frequently applauded.]

The PRESIDENT asked Mr. Fleming whether the disease in Lincolnshire known as "wens," was of a scrofulous or tuberculous nature ? In the fenny districts, beasts had frequently large tumours running down in chains by the side of the face and different parts of the body. Professor Simonds, some years ago, said they were of a scrofulous nature, and the people attributed them to the water of the district. During the nine years he had been in Norfolk he had not seen half a dozen such cases.

Mr. FLEMING had no doubt that this disease was of a tuberculous nature.

Mr. BUTTERS mentioned the case of a valuable shorthorn cow which he attended, suffering from a glandular swelling, upon which he performed tracheotomy. Two or three days afterwards the cow died, when he found on examination that an immense abscess had burst, and the pus, passing down the trachea, had caused suffocation. The liver was a mass of tubercles, and also the mesenteric glands.

Mr. SHIPLEY stated that from his experience he believed Tuberculosis to be on the increase. He had seen several cases where there had been great emaciation, with tuberculous deposits about the lungs and pleura, with death, of course, the result. It was not confined to old animals. Many young animals had succumbed to the same disease. With regard to the milk of tuberculous animals, he considered this a serious matter ; for animals affected with Tuberculosis frequently give very large quantities of milk, which milk he was satisfied was pernicious and dangerous, and productive of a great deal of mischief.

Mr. OVERED mentioned a case in which he removed a large tumour from the throat of a beast, weighing more than 14 lbs., and on further examination he found in the chest and peritoneum the most striking evidence of Tuberculosis. He had seen other cases of Tuberculosis which very much resembled Pleuro-pneumonia, and in which great acumen and judgment were required in the diagnosis.

Mr. GREAVES stated that hitherto, to his mind, Tuberculosis had appeared essentially an hereditary and not a contagious disease, but from what Mr. Fleming had adduced he could now entertain no doubt of its being contagious. The importance of the subject was shown by the fact that this disease specially affected high-bred and valuable animals.

Dr. C. WILLIAMS remarked that all present had acquired from Mr. Fleming's paper an immense deal of information on a subject of the deepest importance, not only to pathologists but to veterinary surgeons. He had never before heard a more elaborate, concise, and interesting paper, which he hoped would be printed and circulated. Tuberculosis was one of the most important subjects the pathologist had to deal with. When they considered the great mortality that year by year took place in England from this most terrible scourge—and he was afraid that it was on the increase—medical men could not be too thankful to their fellow-labourers in the veterinary profession, who threw light on a subject which had hitherto been a dark spot to them. Mr. Fleming had, he believed, proved his points, that the disease was hereditary, and was communicable by contagion and infection. In the human being Tuberculosis was certainly contagious. It occurred much more frequently in communities living in damp situations, damp being a mortal enemy to man and beast. Mr. Fleming had specially mentioned the valleys of Bavaria, and the President the fens of Lincolnshire, as being productive situations for this disease, and the fact that there had been comparatively few cases on record in Norfolk, might, therefore, perhaps be attributed to Norfolk being higher and drier. This was a matter so important as to deserve the consideration of breeders when building cattle-houses and determining as to their locality.

After some further discussion, Mr. FLEMING replied. He said that the disease was by no means so rare as seemed to be supposed, but was assuming a national importance, as it was very prevalent amongst high-bred stock, and high-bred stock was now coming very much into repute for the improvement of inferior stock. If it made as much progress within the next fifteen or twenty years as it had done in the last, it would become as terrible a scourge as the Cattle Plague. He believed that the virus of Tuberculosis in its nature was like the virus of Hydrophobia. It might lie latent in the animal until some circumstance, some exciting cause, developed it, such as a local injury to a gland, or a slight Catarrh, if the tubercle was in the mucous membrane; but whenever the tubercle was stimulated to growth, then tuberculisation extended throughout the system. Although the disease was more prevalent in damp situations, he did not believe that dampness in itself would produce it. The high-class breeding animals were made more artificial, and therefore the soil was more suitable for the planting of the tubercular matter he did not think that the tubercle was bred in the animal, but that the soil was made more favourable for its reception and growth. They should not allow a cow to be bred from that showed any symptoms of Tuberculosis; and they should also be suspicious if she came from a scrofulous stock. These opinions he gave with all reserve, as he had no wish to be dogmatic.

Dr. MILLS having spoken of the importance of diagnosing the disease while the animal was alive,

The PRESIDENT conveyed to Mr. Fleming, in felicitous terms, the cordial thanks of the members for his kindness in being present on that occasion, and for the excellent paper with which he had favoured them, which, he trusted, would be published in the professional journal, and also in pamphlet form for general circulation, to which Mr. Fleming kindly consented, and expressed his acknowledgments.

A vote of thanks to the President for his able conduct in the chair, and

to the Hon. Sec. for his services, was carried with acclamation, and acknowledged by Mr. Santy and Mr. Overed respectively.

The members and visitors afterwards dined together under the genial presidency of Mr. Santy, and spent a very pleasant evening.

J. D. OVERED, *Secretary.*

## YORKSHIRE VETERINARY MEDICAL SOCIETY.

THE annual meeting and dinner were held at the Queen's Hotel, Leeds, on 30th January, the President, Mr. W. G. Schofield, of Pontefract, in the chair. The following members were present :—Prof. Williams, Messrs. M. E. Naylor, James Freeman, Thomas Greaves, W. Edmundson, J. S. Carter, J. W. Anderton, Peter Walker, J. H. Ferguson, P. Walker, R. W. Murdoch, J. Atcherley, J. E. Scriven, D. R. Sowerby, P. Deighton, John Nettleton, and the Secretary. Messrs. Thomas Taylor, W. A. Taylor, T. Hopkin, A. Lawson,—Roberts, Manchester ; Mr. Rutherford, 21st Hussars, and Mr. Sweeting, Wakefield, were present as visitors.

A number of members and friends sent apologies for non-attendance.

Mr. George Hardie, M.R.C.V.S., of York, was unanimously elected a member.

The SECRETARY introduced the subject of the election for members of Council, and after some discussion it was resolved that the Secretary act in concert with the secretaries of the other associations, in order to carry out the election of Prof. Williams as the nominee of the Society. A vote of thanks was unanimously awarded to Prof. Williams for his services in the Council, which the Professor acknowledged in suitable terms.

The PRESIDENT then read the Inaugural Address, and at its conclusion Mr. Greaves proposed, Mr. Naylor seconded, and Prof. Williams supported the unanimous vote of thanks to the President for his able discourse.

At the dinner the usual loyal and patriotic toasts were heartily drunk, and much disappointment was expressed that Professor McCall, of the Glasgow school, had not thought fit to place the preliminary examination of his pupils in the hands of the Council. WILLIAM BROUGHTON, *Hon. Sec.*

The following is Mr. Schofield's address :—

MR. VICE-PRESIDENT AND GENTLEMEN,—Being the first occasion this year at which I have had the opportunity of meeting so many professional brethren, it affords me very great pleasure in wishing you, though late, a very happy and prosperous new year. Allow me also to thank you for the honour conferred upon me by electing me your President for the current year. My acquaintance with this Society dates back some fourteen or fifteen years, when I had the gratification of attending as a visitor one of its meetings held at Pontefract. I well remember the kindly greeting and cordiality extended towards me by that most genial of men, the then president, the late Mr. McTaggart, of Halifax. I little thought at the time that in a few years I should occupy the position which he then so ably filled. Although many amongst you would have filled this chair with greater credit than myself, yet it shall be my bounden duty whilst occupying this position to endeavour to further the progress of this association, and to carry out the wishes of its members, as far as my abilities will allow me, in an honourable and straightforward manner, and, I trust, to your satisfaction. I must congratulate you on the present condition of the Society, it being, I believe, financially sound, and though, perhaps, not numerically strong, yet wide in its influence and social in character.

The benefits derived individually and collectively by being connected with veterinary medical associations are very many indeed. It is the aim of this and kindred societies to promote the interests and well-being of the profes-

sion generally, harmony and unity amongst its members, to endeavour to open out the, as yet, unexplored parts of the vast field of hidden knowledge in connection with veterinary science, and to be the arena in which its many champions may fight their controversial battles in friendly discussion. Men are never so likely to settle a question as when they discuss it freely ; for free and fair discussion will ever be found the firmest friend of truth. Gentlemen, we come here for the purpose of helping others and receiving good ourselves—the older members of the profession to give us the benefit of their large and varied experience, and the younger ones to derive such advice and information as shall fit them to occupy an honourable and distinguished position in the calling they have elected to follow, and be worthy to tread in the footsteps of their talented predecessors. Who are so likely to impart useful information and good counsel as they who have grown old in the profession, they who have witnessed its follies and its failures, its honours and achievements ? And although we may never attain their standard, yet by keeping company with them we shall rise above our own—as trees growing in the society of a forest are said to draw each other up into shapely and stately proportion.

It may unfortunately happen that one member is at variance with another through some real or fancied breach of professional etiquette, some misunderstanding or misrepresentation ; yet under the genial influence created by the assembling together of those mutually interested in the same profession, and in the well-being of its individual members, the clouds are dispersed, the grievance forgotten, the bonds of friendship cemented, and a happier frame of mind instituted. Is there one amongst us who cannot attribute to such meetings as these the formation and consolidation of many friendships, or who have not felt the helping hand of a professional brother in many a difficult case ? I think we shall all agree that we have gained something ; we have acquired some new knowledge, and we shall recall the past day not only without disgust and without regret, but with consummate satisfaction.

The profession to which you and I have the honour to belong is now, I am pleased to say, recognised as one of the institutions of the country, and justly so, for it has the charge and well-being of many millions of animals, which constitute a large portion of the wealth of the nation. It is from the bovine and ovine tribes that our chief food supply is drawn ; and from the equine we derive the means whereby a large proportion of the commerce of the country is disseminated, and which also contribute largely to the pleasures and pastimes of the inhabitants. It is therefore our duty, both in the interests of science and the community at large—and need I say for the especial benefit of the animals themselves ?—to endeavour by all possible and legitimate means, by scientific research, indomitable energy, perseverance and pluck, to make ourselves acquainted with the causes of disease ; and then having acquired that knowledge, to put forth our energies for the better prevention, alleviation, and cure of those maladies to which the dumb creature is liable. Bacon says, " Every man is a debtor to his profession," from the which, as men do of course seek to receive countenance and profit, so ought they of duty to endeavour themselves, by way of amends, to be a help and ornament thereunto. Ours is indeed a noble science, for the objects to be attained are humane, charitable, and benevolent. The structures and functions of the bodies of domestic animals are much the same as in the human being, and the laws which govern the diseased processes in man and the lower animals, and the principles which dictate and guide the practice of human and veterinary medicine, are identical; but in the diagnosis of disease we are placed at a great disadvantage, from the fact that we have to deal with dumb patients. We can elicit no information from them, but are dependent in a great measure on the attendant in charge for the history of

the case, and very scant information you get generally, yet your employer often expects you to tell him the exact cause of the disease or injury to which your attention has been called. How often would cases be simplified but for the groom withholding highly important information, but which, if divulged, might cost him his situation! And, again, how many cases are lost from procrastination, negligence, ignorance, and self-conceit on the part of the owner, or from an utter want of sympathy on the part of the nurse towards his patient!

The veterinary surgeon should be a man of keen perception and of an acute and observant nature, for upon the exercise or non-exercise of such qualities as these mainly depends a correct or incorrect diagnosis, resolution, or dissolution in your patient, and consequently success or non-success as a practitioner.

And let me here say a few words respecting the training of the embryonic veterinarian. A step in the right direction has been taken by the introduction of an extended curriculum at the various teaching schools, and the adoption of a practical examination, which latter should be no dead letter. The matriculation examination is also a necessary adjunct, as a test of the educational attainments of each intending student; and this should be strictly adhered to, for without a good sound education no candidate should be allowed to cross the threshold of our Colleges. Such an education will pave the way and prepare the mind for the reception of the more scientific teachings with which he must hereafter be conversant.

A classical and scientific education, however, is useless, unless combined with practical instruction; and as this cannot be fully imparted, for various reasons, at our veterinary institutions, it is, in my humble opinion, essentially requisite that every veterinary aspirant should be placed for at least two or three years under the care of an experienced practitioner, previous to his entering college. This will prove of great benefit to him, by bringing him in direct contact and association with those animals which at some future time he may be called upon to treat as patients, and will give him a knowledge of their habits and surroundings.

It will also give him an insight into the many and various aspects of the profession, the oddities and peculiarities of individuals who are to be found amongst his clients, and the antique and fantastic theories and ideas of horsemen which require exploding.

Without a lengthened period of practical tuition, it is quite possible, I grant you, for a man to pass successfully his examinations, and to leave the college with his diploma under his arm at the end of the minimum time stipulated by the rules of that college; and yet if his practical knowledge be only of a superficial character, can you expect him to be a clever, useful, and successful practitioner? I say no. The man who shines well in theoretical and scientific knowledge, often presents a sorry appearance in the sick-box. He lacks confidence in himself, tenders his advice with hesitation, is too apt to appropriate the opinions of others (and stablemen are ever ready to volunteer theirs), loses the confidence of his clients, becomes disappointed and discouraged, consoles himself with the idea that he has mistaken his avocation, and finally retires from the scene to seek some less troublous and more genial occupation. I should also like to see such subjects as diet, ventilation, and sanitation more largely dilated upon at college, as these subjects are not only useful to ourselves, but of which many of our employers reasonably expect us to possess a knowledge, and look to us for information and advice thereon.

I think the bridging of the gulf which a short time ago existed between the Royal College of Veterinary Surgeons and the Highland and Agricultural Society is a matter for intense congratulation, as it now enables many able,

worthy, and respected members of the profession, men of good social status, scientific knowledge, and practical experience, who have hitherto held only the certificate of the Highland Society, to procure for a mere nominal sum the diploma of the "Royal": thus removing one great element of discord, and furthering the advancement of that one thing which I am sure we all sincerely desire—viz., Professional Unity. That grand old motto of our corporation "Vis unita fortior," has for a long time appeared to me as an anomaly, but through the vista of futurity I begin to discern the analogy and its realization. And now that this great stumbling-block has been removed, I trust that the question of a penal clause will again come to the front. In looking over a Post-Office Directory of the West Riding of Yorkshire, published about two years ago, I found blacksmiths, farriers, and bone-setters designated as veterinary surgeons. This is a lamentable state of things, and I think it is high time some move was made in the matter. The public are thus imposed upon by men representing themselves as veterinary surgeons, who have no qualification whatever pertaining thereto, and it is a mistake to imagine that the public yet thoroughly understand the radical difference between a qualified and an unqualified practitioner.

Although we may not have much to fear from charlatanry and empiricism, yet it is only natural that we should desire to see our institutions, rights, and privileges protected againt spuriousness and bastardy. There are many other subjects of interest to us which might have been touched upon, but as it was my intention to be brief, and knowing that we have amongst us to-day eminent and distinguished members of the profession, who will interest you far more than I am able to do, I shall conclude by earnestly appealing to every individual connected with us to aid and assist in promoting the advancement of our science, to put his shoulder to the wheel; and though impossible by one huge effort to lift the profession to the desired attitude, yet we must by patient plodding, by a "long pull, a strong pull, and a pull altogether," and with a determination to press onwards, eventually reach the long-looked-for goal.

"Let us then be up and doing,
With a heart for any fate;
Still achieving, still pursuing—
Learn to labour and to wait."

## MONTREAL VETERINARY MEDICAL ASSOCIATION.

THE usual fortnightly meeting held on January 22nd was unusually interesting. The chair was occupied by Professor McEachran. Mr. Henry Quimby, of Rochester, N.Y., was elected, and Mr. Andrew Metcalf Hudson was proposed for membership.

The first paper was read by Mr. Richard Price, on the death of a horse caused by the too free application of coal oil.

Mr. A. W. Harris, Ottawa, read a very interesting paper on Glanders, in which its contagious nature, incurable character, and communicability from the horse to all animals, cattle excepted, were explained. He also pointed out that not only animals, but men became inoculated; hence this was a disease which claimed the attention not only of veterinarians, as such, but sanitarians and philanthropists should see that this disease was properly dealt with by the authorities, and wherever it occurs the animals should, after proper examination by competent persons, be destroyed. He pointed out the different diseases which might be mistaken for Glanders, and urged his fellow-students to study the disease carefully, as mistakes sometimes occurred by the disease not being recognised, and serious losses entailed by the blunder.

A most interesting discussion ensued, which elicited valuable information.

The Chairman being asked what the law of Canada was with regard to this disease, replied that this disease being a contagious one, was included in the provisions of the "Act to provide against infectious or contagious diseases affecting animals," May 15th, 1879, in which section 2 provides that all such diseases be at once reported to the Minister of Agriculture; and in case of malicious or fraudulent concealment of the existence of such disease, the person so acting is liable to a fine of 200 dollars.

No. 3 provides that if any person keep or graze any animal known by him to be infected by such a disease, in or upon any forest, wood, moor, beach, marsh, common, waste land, open field, or roadside, is liable, on conviction, to a fine of 200 dollars.

No. 4 provides that any person bringing, or attempting to bring, into any market, fair, or other place, any animal known by him to be infected, or labouring under such an infectious or contagious disorder, shall, on conviction thereof, forfeit and pay for any such offence a sum not exceeding 200 dollars.

It will thus be seen that ample provision is made for suppressing and stamping out such diseases.

After the close of the discussion, the following important resolutions were unanimously passed:—

"Resolved, That this Association has learned with pleasure that it is intended by the Council of Agriculture to apply to Parliament during the coming session for a Bill for the protection of the veterinary profession in this province, and that it is the unanimous opinion of this Association that such a Bill is much needed, and will be the means not only of raising the status of the profession, but will prevent much suffering and injury to animals from the ignorant and cruel practices of quackery."

"Resolved, That this Association recognises the necessity for some steps being taken to form a Dominion Association, so that, as a united body, yearly or half-yearly meetings could be held, at which questions relating to the general interests of the Profession could be discussed, and further, that in the opinion of this Association the present disunited condition of the profession, and the want of a Dominion Association is injurious to it, and not only lessens its influence, but retards its progress."

"Resolved, That circulars be issued by this Association to members of the profession in the several provinces, asking them to co-operate in the formation of such an Association, and a meeting be called at the city of Ottawa, at as early a date as will suit the convenience of the majority."

After votes of thanks being passed to the essayists, the meeting adjourned.

At next meeting Mr. Brown and Mr. Baker will read papers.

## ROYAL AGRICULTURAL SOCIETY.

AT the monthly meeting held on February 4th, the Veterinary Committee proposed for the consideration of the Highland Society and the Royal Agricultural Society of England, that each contribute a sum not exceeding £100 towards the prizes and expenses of the examinations in veterinary science; that the written portion of the examination be held at Edinburgh and London simultaneously; and that the examination in practical pathology, in Dec., 1880, be held at Newcastle-on-Tyne; the expenses of the examiners being paid by the Societies, and the second-class fares of the candidates also.

## THE ROYAL VETERINARY COLLEGE AND THE PROFESSION.

ON February 9th, at 3.30, the committee appointed by the Governors of the Royal Veterinary College to receive the deputation of the practitioners, attended at the Board-room in the College. The committee were, Lord A. Somerset, Sir Frederick Fitzwygram, Bart., and Mr. Harpley. The practitioners were represented by Messrs. J. T. Lupton, W. Hunting, and Robert Ward. Fellows; Messrs. Helmore, E. Coleman, J. Woodger, Jun., J. Gerrard, C. Sheather, J. and T. Moore, and J. Rowe, Jun., Members of the Royal College of Veterinary Surgeons.

Sir FREDERICK FITZWYGRAM, Bart., occupied the chair. He said the Governors were most anxious to hear the complaints of the practitioners against the present system, rules, and regulations of the College, and to place the institution on a sound footing with them; and with that object they had met to hear what the deputation had to complain of, with a view of meeting them fairly.

The Hon. Sec., Mr. J. MOORE, read a general statement of the grounds of complaint, pointing out that large firms owning a great number of horses only subscribed two guineas for all privileges; among them were several extensive horse-dealing firms and jobmasters. The general explanation of the grievances having been so often discussed in our pages, we need not enter fully into all that was urged by Mr. Moore; but we may state that a petition, containing the names of nearly 300 leading country and provincial practitioners, was presented by him, in refutation of the statement that the movement was only supported by a few uninfluential London members. A very large number of the latter would have been present, but it was resolved to appoint only a small deputation.

Mr. HUNTING, in a very clear and expressive manner, opened the case to the Governors. He said he thought the subscription fee of two guineas should be considered as a donation to a public scientific institution, the same as to a hospital, and that pathological cases should find admission free; but that those who wished to enjoy the advantages of the professors' skill, should pay the same for treatment as they would to a respectable member of the profession. With reference to shoeing, he thought the forge should not be open to non-subscribers, but since he had been there that day he had his doubts about it. However, the charges were certainly too low for a veterinary school. Shoes should be 6s. per set, leathers 1s. each, removes 9d. each, and if only one at a time, 1s. The fees the professors charged were far too low for men *considered* to be at the head of the profession—no member having a fair practice could afford to leave his business for less than three guineas a-day, and indeed those well-to-do for less than five guineas. He thought a professor should charge five guineas, then the public would not object to pay a practitioner three guineas. And he would suggest that when professors went into the country, they should be compelled to give notice of their intended visit to the local practitioner in every instance. He assured the Governors that the practitioners, one and all, had the best feeling towards the College, and desired to do all in their power to assist it to become what it should be, the scientific institute of the profession in England. Considering the responsibility, one guinea should be the uniform charge for every examination of horses as to soundness—examination for nothing was out of the question.

Mr. LUPTON said he thought the Governors would act wisely by making the general scale of fees high, as it would then lead the public to set a *value* on our services; but when a professor, who is *supposed* to represent the highest grade of scientific knowledge, is *valued* at almost nothing, the profession cannot stand well in esteem or elevate itself—the first step

must be made at the College, then the practitioners could fix remunerative fees. The profession was proverbially a poor one, and this was the cause: remove it, and then we advance. The livery of 3s. 6d. was not a hospital charge, it was hardly a livery stable charge. There was medicine, attendant's time on a sick patient, as well as keep; no one could make 3s. 6d. pay. The charge should be 4s. 6d. or 5s. at least. Referring to drugs, he said medicine was sold when he was a pupil there—balls at about 3s. 6d. per dozen; this, he heard, was so now: it should not be allowed. The poor should certainly have gratuitous access to the College. The examination fee should be one guinea, the privilege of having horses examined for nothing should cease. If the subscribers paid 10s. 6d. for each horse examined, it would be a concession to the profession.

Mr. HELMORE spoke of the injurious system of allowing large firms to subscribe, and expressed his opinion that if the fees were raised, the support would be the same, and the funds of the school benefited. He had always made a guinea his fee for an examination, and thought it should be the College charge. He also agreed that the shoeing should be confined to subscribers, and the charges increased.

Mr. WARD mentioned two instances that had occurred to him, as examples of the pernicious effects of the College subscription system on the practitioner and the College itself. Mr. Barley, of Dudley Wharf, saw the *Veterinarian* in his consulting-room, and reading the advertisement, he went to the College, paid two guineas, and now has a large stud of horses attended for that ridiculously small sum. During the Kilburn Show, he had an interesting and tedious case in a valuable cart-horse, which he thought should be sent to the College. He, however, on reflection did not send the case there, fearing the clients, a large firm, might not only subscribe, but be lost to him should he do so. He suggested that members of the profession should subscribe, and have the privilege of sending such cases there, but that no case should be received except certified by a member of the R.C.V.S. as an interesting case for admission. There was a difficulty—he only threw out the suggestion, something might be made of it. He also referred to professors acting as veterinary officers at the horse shows—not scientific, but commercial speculations.

Mr. SHEATHER stated that, even as a young member, he had already experienced the bad effects of the school competition, particularly so from being so near the College.

Mr. ROWE detailed his grievances, and alluded to his attending sick animals at night, then at daybreak finding they had been removed to the College. The shoeing department gave him some annoyance as well. He said he had just obtained a College subscriber, who had tired of the institute; this made some amends for a client in Albany Street, who had recently become a subscriber.

Other members of the deputation spoke of the pernicious effects of the school competition in general, and gave illustrations. The Governors promised that the statements made should receive every consideration; they felt that ground had been established for complaint, and the difficulty was, how to apply a remedy. The matter would be brought before the general committee, and reform would follow. The state of things had been in existence so many years, that it could not be expected complete reform would develop at once, but the best should be done under the circumstances, and this, they hoped, would prove satisfactory.

Mr. HUNTING moved a cordial vote of thanks to the Governors for the courteous manner in which they had received the deputation, and the earnest spirit in which they had identified themselves with the practitioners.

The above is a very brief report of the meeting. It may be added that

some conversation took place about the professors visiting beyond the College and against its rules. This subject was to be discussed by the committee, and also the custom of the professors taking the appointments at the horse shows, etc., as veterinary officers. Mr. T. MOORE also suggested that the fees received at all times by the professors should be handed over to the College treasurer ; their stipend should be exclusive of such fees, and the *incentive* to practice being thus removed, the professors would have the scientific objects of their profession alone in view.

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## Army Veterinary Department.

*Gazette*, January 23rd.

VETERINARY DEPARTMENT.—Frederick John Short, gent., and Harry Arthur Woodroffe, gent., to be Veterinary Surgeons on probation.

*Gazette*, February 24th.

VETERINARY DEPARTMENT.—Inspecting Veterinary Surgeon W. Death retires on half-pay.

Most favourable reports reach us as to the excellent services the Indian Veterinary Department is rendering in Afghanistan, and the press of that country is loud in its praise. The *Civil and Military Gazette* of Lahore, in its issue for January 7th, for instance, has the following favourable notice :—

"The Veterinary Department is doing admirable service in respect of the transport depôts at Peshawur and Jhelum. At the former station the depôt hospital for sick animals, superintended by Veterinary Surgeon Skoulding, R.H.A., has over 1,500 under treatment, nearly all of them from Cabul and the intermediate stations. The majority of these animals will be again rendered serviceable. At Jhelum the infirmary contains over 1,200 sick cattle under the superintendence of the principal veterinary surgeon, to whose administrative ability is due the merit of a systematic and energetic working of the department in a direction hitherto untried. Two hundred baggage animals are discharged weekly, on an average, from each of these veterinary hospitals, and returned fit for service, where formerly they would have been sacrificed for want of care, rest, and attention. The campaign has proved that the most unsatisfactory beasts for army transport purposes are the bullocks ; they are very slow, easily break down, and are difficult to feed and drive. Foot-and-mouth Disease has shown itself at the different stages, though promptly checked. The bullocks from the southern districts cannot stand the cold of Afghanistan, and the clothing destined for them is in great part useless, from being fitted for the smaller-sized Punjabi bullock. The veterinary staff both at Jhelum and Peshawur should be strengthened ; at the former station about 150 animals arrive daily, draughted from all parts of India. Constant inspection is therefore necessary to prevent the introduction of infectious disorders, and the work on the present establishment is extremely harassing."

We learn that the duties imposed upon the veterinary surgeons at the depôts and with the various corps in Afghanistan, are extremely heavy and trying. Nevertheless, they are carried out with willingness and zeal, though there is no prospect of any recognition or reward. The Zulu campaign has afforded ample proof that veterinary surgeons in the army are doomed to official neglect in high quarters, no matter how they may exert and sacrifice themselves. For them fortune has no smiles, and this fact is now being generally recognised among their brother officers throughout the service, who have learned to pity them because of the unfair treatment to which they are subjected. The *Army and Navy Gazette* of February 7th, merits the

thanks of the entire profession for its generous outspoken remarks on behalf of army veterinary surgeons. It says :—

"Principal Veterinary Surgeon Collins, Inspecting Veterinary Surgeon Gudgin, and the officers of the Veterinary Department, command our sympathies, and those of every officer in Her Majesty's army. We all know what alarming reports reached England as to local horse diseases, when first the idea of sending out mounted troops to the Cape was mooted. To the officers of the veterinary staff was entrusted the duty of battling against any epidemics of the nature indicated. They set themselves to work manfully, and under the able supervision of Mr. Gudgin, succeeded in saving the country many thousands of pounds, not alone by the care they took in performing their legitimate duties, but by conducting local purchases, and making themselves generally useful in the field. Yet they return home to find those in power so wanting in all sense of justice as to deny them even the paltry acknowledgment of a C.B.-ship for the officer upon whom fell the charge of the arrangements of the campaign. We cannot think that this is done with the sanction or even knowledge of Lord Chelmsford or the staff of the Horse Guards. If the Veterinary Department is to be considered inferior, socially speaking, to the other departments of the army, by all means take from the officers of the department the relative rank which places them on an equality with those of the other non-combatant branches ; but so long as they retain their present position, and are commissioned as officers, they have an absolute right to be treated with the same consideration which is meted out to others. The present head of the veterinary service is an officer who, for many years past, has laboured most determinedly to raise his department in the public estimation. He has, since his promotion, exercised the very greatest discretion in the acceptance of candidates. He will, indeed, have an up-hill task to perform, if the War Office is intent upon doing everything in its power to prevent him from ever realising his wishes, and carrying out the good work he has found it necessary to inaugurate. And no surer means could possibly have been hit upon than the unjustifiable insult to which Inspecting Veterinary Surgeon Gudgin has just been subjected. A more uncalled-for slight was never passed upon a public department, and the prevailing opinion is, unfortunately, that Mr. Gudgin's services have not been unintentionally ignored. If the veterinary officers of the army have any friends, now is the time for them to bestir themselves, for it must be evident that a blow has been cast at the good name of the department which cannot fail to be most injurious in its effects, to still further lower a service which we had every reason to hope would have been raised considerably under the able administration of its present chief."

Colonel Baker Russell, in his Sekukuni despatch from South Africa, mentions "Veterinary Surgeon Moore, who attended to wounded horses on the field with great coolness."

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## Obituary.

THE decease is reported of Mr. J. J. Bagley, Bridgenorth, Salop, who graduated in 1869 ; also of Mr. J. Clarke, late of Wem, Salop, who died at Roath, Cardiff, on January 27th, and who graduated in 1861.

On October 11th, 1879, died Harald Viggo Stockfleth, doctor of medicine, and professor at the Copenhagen Veterinary School. He was born in 1824, and receiving his education first at a public school, entered the university of that city. Taking an educational degree there, he studied four years at the veterinary school, and graduated in the first rank. Practising his profession for a few years as Government Veterinary Surgeon, he was finally appointed

as teacher at the veterinary school of Copenhagen. In 1869 he was decorated with the orders of St. Olaf and the Danebrog, and in 1870 was elected a member of the Veterinary Board of Health. In 1879, on the occasion of the 400th anniversary of the Copenhagen University, he received the degree, *honoris causa*, of doctor of medicine. From 1853 to 1876, at the request and expense of the Danish Government, he visited, professionally, Germany, France, Upper Italy, Sweden, and England, and his observations were published in the Danish veterinary journal from time to time. In 1861 and 1863 he published a work in two parts, on chemical veterinary medicine, and recently a most excellent treatise on veterinary surgery.

Stockfleth, as a citizen, scholar, teacher, and man of science, occupied a very high position in his native country, and was a worthy colleague of such veterinarians as Tscherning, Bendz, and Bagge. His early death inflicts a heavy loss on veterinary science, but in Copenhagen it will be most acutely felt. In private, his character was unblemished, and in the words of a friend, he was "ein Ehrenmann durch und durch."

M. Dupont, veterinary surgeon at Bordeaux, died recently, at the age of sixty-four years, leaving 400,000 francs to his native city, Pau.

The death is announced of Dr. Gaddi, professor of anatomy in the Bologna Veterinary School. Also of Professor Chiappero, of Turin, known for his share in the production of Bassi's esteemed work on veterinary medicines.

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# Parliamentary Intelligence.

*House of Lords.—February 19th.*

## TRICHINOSIS.

LORD THURLOW asked the Government whether it was true that an outbreak of Trichinosis occurred in January last, on board the reformatory school ship *Cornwall*, lying off Purfleet, on the Thames ; and if so, how many cases occurred, and what number had terminated fatally ; also whether the outbreak had been traced to the use of American or other foreign pork ; and, in that case, what precautions, if any, had been taken by Her Majesty's Government to guard against the very serious dangers to which the public are exposed by the importation from abroad of pork infected with this disease. The question, the noble Lord observed, was one of fact, and of equal importance both to consumers and producers of meat, and a great deal of anxiety naturally prevailed on the subject. If it should be proved that the outbreak he referred to had really occurred, he trusted it would be in the power of Her Majesty's Government to state that some precautions had been taken to protect the public, and especially the poorest classes, who were most exposed, from a very great danger, and from which they were practically unable to protect themselves. Last year the noble Duke, the President of the Council, in replying to a question that was addressed to him on the subject, spoke of cooking as a safeguard ; but it had been proved by experiments in the United States and in Germany, that a greater amount of cooking than was required for ordinary culinary purposes would be necessary in order to be effectual in preventing Trichinosis.

Earl BEAUCHAMP replied that he was not surprised that the noble Lord had called attention to this subject ; but all the information he was able to give in the matter was, that the Home Secretary had instituted an inquiry. That inquiry had not as yet terminated, or at least the report of it had not been delivered. He was unable, therefore, to say more than that the attention of Her Majesty's Government had been directed to the subject.

# Notes and News.

MILK OF RUMINANTS.—In all probability there has not been sufficient attention, thinks Dr.Brush, drawn to the differences existing between the milk of animals which ruminate, as the cow, and those which do not chew the cud, as the ass and horse ; and he would divide milk into two classes—that which is the product of non-cud-chewing, and that which is the product of cud-chewing animals. The milk of the cud-chewers contains a variety of casein, which, under the action of the digestive process, coagulates into a hard mass. Contrary to the often-expressed belief, he declares that this coagulation takes place in the ordinary process of digestion in the calf. He had one tied up out of the reach of any food, and had it fed with freshly-drawn cows' milk. Half an hour after its meal, he always found it busily chewing its cud. After many inquiries, he has ascertained that the same takes place with the sheep and goat ; and from these facts, he is inclined to explain the difficulty often experienced by the human stomach in properly digesting the milk of ruminating animals. The other variety of milk, to which human, equine and asses' milk belongs, does not, under the action of acids, in the same way coagulate into the hard mass that is found in cows' milk, but coagulates rather into small granular or flocculent masses, which are easily diffusible. This would explain why Kumyss prepared from cows' milk is found to agree better with children than cows' milk itself ; the Kumyss has been, so to speak, already chewed. In the milk of the cud-chewers there is but a small amount of sugar and a large amount of casein, while exactly the reverse of this is the case with the milk of the non-cud-chewers ; and in this fact there is again a reason why the milk of the latter, at least in the case of children who cannot get their natural supply, is to be preferred. It will be remembered that Kumyss is a beverage prepared by the people of Yakutz from mares' milk, and found to be highly nutritious, but that the beverage referred to by Dr. Brush is a product artificially prepared from cows' milk.

WE learn that at a recent meeting of the Roscrea Board of Guardians it was unanimously resolved that, in consequence of the expense incurred by the ratepayers of the union in the inspection of animals affected with "Black-leg," an ordinary disease, which they do not consider contagious, they begged of his Grace, the Lord Lieutenant, to have that disease omitted from the Anthoroid Disease Order.

COMPARATIVE PATHOLOGY IN FRANCE.—Some time ago, Professor, now Doctor, Chauveau, was elected to the post of professor of comparative pathology in the Lyons University. It gives us great pleasure to learn that M. Bouley, director of the French Veterinary Schools, has been appointed to the newly-instituted chair of comparative pathology, in the Museum of Natural History of Paris. He had previously been unanimously elected by the Academy of Sciences to fill the chair of physiology at the Museum, which had become vacant by the death of Claude Bernard ; but, notwithstanding, the Minister of Public Instruction appointed M. Rouget to that chair, and only succeeded in averting a storm of indignation by instituting a chair of comparative pathology, into which he placed M. Bouley—greatly to the advantage of veterinary and human medicine, we venture to think.

HYDROPHOBIA IN IRELAND.—Hydrophobia, for a long time an extremely rare disease in Ireland, is now far from uncommon. The *Dundalk Democrat* for February 7th, reports the death of a girl, eight years old, who a month before was bitten in the cheek by a dog. She lived four days after the symptoms of Hydrophobia became developed.

Disease among Yaks in India.—We learn that there has been a serious murrain among those useful bovines of the Himalayas, the yaks—at Darjeeling, owing, it is supposed, to their feeding in too low-lying pastures.

The Fossil Horses of Constantine, Algeria.—The French veterinary surgeon, P. H. Thomas, has quite recently published an interesting account of the remains of some fossil horses found in the neighbourhood of Constantine, Algeria. The environs of Constantine are traversed by large and deep valleys, on the flanks of which (so far as an elevation seldom exceeding 600 metres) the stripes of a fluvial-lacustrine pliocene formation lie stratified. These, at their base, are characterised by the presence of a chalky marl, and towards their summits by gritty conglomerates, pudding-stones, and sand. The fluvial-lacustrine deposits contain a somewhat transition fauna composed of some of the larger vertebrates, amongst which two species of horse have been found—one an Hipparion, and one very near to, if not identical with the *Equus stenonis* (Gaudry) of the pliocene of Europe. In the bottom of these valleys, at the base of the steep banks of the larger rivers, turfy deposits are found, appertaining, in all probability, to a recent quaternary period in which a fauna appears—which, though showing some affinities to the previously-mentioned fauna, is more clearly connected with that actually existing. Here are to be found remains of a horse (*Equus caballus*) differing only by a few secondary characters from the actually living African horse ; an ass of small dimensions, presenting in its dentition some characters calling to mind the genus Hipparion, which genus had, however, disappeared since the preceding geological period. In the grey marl which immediately lies over the alluvial turf, and which appears to be very recent, there will be found in the lowest strata the remains of horses, horned cattle, and molluscs differing in no way from those of the present day. In a middle stratum, remains of flint weapons have been found (at about 2.50 metres from the surface of the soil); while at about one metre below this surface, vestiges of the Roman occupation are met with.

Physiological Action of Arsenic.—The *Oesterreichisches Landwirthschaftliche Wochenblatt* gives a conveniently short summary of the results of Gies's experiments upon the influence of small doses of arsenic upon live stock. For four successive months he gave it daily to sucking-pigs, rabbits, and poultry, the quantities being 0.0005 to 0.0007 grammes a day for rabbits, 0.005 to 0.05 grammes for sucking pigs, and 0.001 to 0.008 grammes each for fowls. In every case the administration was followed by an increase of weight in the animals experimented on, and also of subcutaneous fat. In young animals there was noted a remarkable development of the bones both in length and in thickness, and the peculiarity was observed throughout that a layer of compact osseous tissue was formed over them in situations where their structure is normally spongy or cancellated. Further, a compact stratum of bone was deposited immediately under the cartilages of the long bones, just as Weigner observed to be the case when he mixed small quantities of phosphorus with animals' food. Gies accounts for the fact that other animals in the same sheds, which were not under arsenical treatment, exhibited similar appearances of the bones, by the hypothesis that the atmosphere in them was impregnated with arsenious exhalations from the breath and the skin of those experimented on ; and he showed that the like appearances could be produced at will by confining small animals in pens on the floor of which arsenic was sprinkled. Besides this change in the bones, there was also noticed fatty deposits in the heart, liver, kidneys, and even in the spleen. The young born by animals under treatment with arsenic were mostly dead, and exhibited a remarkable hypertrophy of the spleen, and a commencing alteration in the structure of the bone.

SHEEP-POISONING BY LUPINES.—The *Deutsche Landwirthschaftliche Zeitung* calls attention to the occasional great mortality among sheep in districts where lupines form a part of their food, and chronicles two recent outbreaks in the March Ukrain, in one of which the whole flock of 700 ewes died in two days, while in the other but 100 of a large flock were saved. The matter is at present surrounded with a good deal of obscurity, lupines in decidedly damaged condition being frequently fed to cattle with entire impunity, while in other cases their consumption when of apparently excellent quality is followed by most disastrous effects. In the *Œsterreichische Vierteljahresschrift für Wissenschaftliche Veterinärkunde* appears an interesting account of Professor Dammaun's experiments on the poisonous action of lupines upon sheep, an accident of very frequent occurrence in many parts of Germany, more especially in Silesia, Brandenburg, Saxony, Pomerania, and West Prussia. The professor fed healthy sheep upon hay made from lupines, which was to all outward appearance in perfectly good condition, except only that a few fungi of the Pleospera species were here and there present. This is a circumstance of very usual occurrence, and hay thus affected has been repeatedly employed without any injurious effect. In Dammann's experiments nearly all the sheep thus fed became ill, and most of them died. From *post-mortem* evidence, and from the symptoms exhibited during the progress of the disease, he arrived at the conclusion that the animals succumbed to chronic poisoning, occasioning paralysis of the urinary and gall bladders, and consequent inability to get rid of the secretions in a normal manner. The bladder being thus unduly distended, any urine further secreted was retained in the pelvis of the kidney, causing its dilatation, and leading to general disease in that important organ. Death appeared to be occasioned by Uræmia, or absorption of the materials of the urine into the blood ; the mischief thus set up being aggravated by a similar absorption of the constituents of the bile, owing to the paralysis of the gall bladder. As to the precise nature of the poison that occasioned these effects, and whether it is developed in the fodder itself, or is due to the presence of the fungi observed in it, the professor has not yet been able to arrive at any definite conclusion. He is continuing his researches on these points, however, and we are promised in due time a further communication on the subject.

HOW TRICHINOSIS IS SPREAD.—At the meeting of veterinary surgeons held in Bavaria in the course of the past autumn, some very interesting communications were made on *Trichinæ* as they occur in men, swine, and rats, and on the recent discovery that they are far more common than had hitherto been supposed in these last-named animals. Two cases in point were specially mentioned. In February of last year, seven persons in the town of Hof were simultaneously attacked with Trichinosis, which was clearly traced to their having partaken of the raw flesh of a pig just killed by a private inhabitant. Of these seven patients one died after a six weeks' illness. A *post-mortem* examination revealed an enormous number of *Trichinæ*, both free and encapsuled, in the muscular fibre, and in the contents of the intestines. After this discovery the professional inspection of all swine flesh was introduced in the town, all the butchers agreeing to have it carried out at their own expense. Besides this, a general poisoning of rats was undertaken by order of the police, which led to the interesting discovery that all the rats from the house in which the trichinous pig had been kept and slaughtered were infested with *Trichinæ*, while those in the adjoining houses were perfectly free from them. Only in one house, on the opposite side of the street, which was connected by its drainage system with the first-mentioned one, were the rats trichinous, and here the pigs also were found to be subjects of the disease. In the second case, *Trichinosis* manifested itself in fifteen persons at Bamberg, under the following circumstances. In the beginning of March, 1878, two

large Bavarian pigs were slaughtered at a local hotel, and on a cursory inspection appeared free from *Trichinæ*, a proper microscopical examination not having been made. The hams from these pigs were salted and smoked, and served to various customers in the month of May. A short time afterwards all these persons were seized with a disease the nature of which at first appeared doubtful, but was fully established by microscopical inspection of a portion of muscular tissue removed from one of them by an exploring needle. This was found full of *Trichinæ*. The hams of which they had eaten were by this time all consumed, but an examination of three pigs still remaining on the hotel premises in August showed them all to be trichinous. Later on it was discovered that the son of the landlord had been in the habit of giving rats, which he shot on a piece of land through which the main sewer passed, to these swine to eat ; and a number of rats from the same ground having been thereupon caught and examined, it was found that twelve out of twenty-four of them were infested with *Trichinæ*.

Arsenic in Animals.—Professor Ludwig has recently (*Wiener Akad. Anz.*) inquired into the distribution of arsenic in the animal organism after ingestion of arsenious acid. The objects he examined were the organs of suicides who had poisoned themselves with arsenic, and of dogs which were poisoned, some acutely, some in a chronic manner, with arsenic. In all experiments it was found that the arsenic accumulated most in the liver, and that in acute poisoning the kidneys also contained arsenic ; whereas in the bones and in the brain there was little of the poison. In case of chronic poisoning with arsenic, where death did not ensue, the poison was found to remain (after ingestion was stopped) longest in the liver, being much sooner excreted from the other organs. The results of this investigation are in direct opposition to those obtained by Scolosuboff, who always found most arsenic in the brain.

Fish as Food for Cattle.—M. Thomas Payen has just published a note on a question of considerable interest from an industrial and agricultural point of view. It concerns the transformation into oil and cake of a certain variety of fishes which are found in enormous numbers in the Sea of Azoff, and more especially in the "Mer Putride," into which large quantities of sewage finds its way. These fish, which bear a close resemblance to anchovies, migrate every year, passing through the Straits of Kertch. M. Payen was particularly struck with their wonderful richness in fat, and having often seen them sold at Balaclava at nine francs, or even less, per 1,000 kilogrammes (!), he suggests that a remunerative industry might be created for the purpose of extracting their oil, which is white, clear, and free from disagreeable smell, and converting the residue into most nutritious feeding-cake for cattle.

Antiquity of the Horse on the American Continent.—Since the original account of American fossil horses given by Leidy, the Eocene strata of New Mexico and Wyoming have yielded two very important ungulates, which have helped to complete the history of the descent of the horse, so well worked out by Professor Marsh. These relics carry back the ancestry of this familiar quadruped to the oldest Tertiary time. The earliest form, *Eohippus*, was about the size of a fox, had forty-four teeth, the molars having short crowns and being quite different in form from the pre-molars. There were four well-developed toes, a rudiment of another on the fore foot, and three toes behind. The structure of the feet and of the teeth in *Eohippus* indicates, beyond question, that the direct ancestral line to the modern horse had already separated from the Perissodactyls. The second of these ungulates, *Orohippus*, is from the Wyoming Eocene, and is evidently next to *Eohippus*, which it now replaces in the line of descent. In size it about equalled its predecessor, but the rudimentary digit of the fore foot has disappeared, and the last pre-molar has gone over to the molar series. Another Eocene equine, discovered in Utah, is *Epiohippus*.

CATTLE DISEASES IN IRELAND.—The return to the Veterinary Department of the Privy Council Office shows a total of sixty-two cases of contagious or infectious disease reported in Ireland during the week ending December 31. Of these, Connaught supplied only one—that one was a case of Pleuro-pneumonia; Munster contributed eight beasts, all suffering from anthracoid diseases; Ulster had four cases of Pleuro-pneumonia, and six of anthracoid diseases; and Leinster swells the total with twenty-three cases of Pleuro-pneumonia, fifteen cases of Sheep-scab, and five cases of anthracoid diseases. The case of Pleuro-pneumonia in Connaught occurred in Ballina Union; Lisburn supplied three of the Ulster cases; Dublin, North and South, and Balrothery, nearly all the Leinster cases of the same; while the Sheep-scab is wholly reported from Edenderry, in the King's County.

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## Correspondence, etc.

### ROT IN SHEEP.

*To the Editor of the* VETERINARY JOURNAL.

SIR,—I enclose you an extract from the *Northampton Herald* of to-day's date. It speaks for itself. The sentiments contained in it are what I hear daily expressed in this part of the country, where farmers are losing their sheep in vast numbers, or are having them slaughtered, "to save their lives," as the expression is. A large farmer in my immediate neighbourhood informed me last week that he had two butchers at work on his farm, employed in slaughtering and dressing his in-lamb ewes, and that he would sustain a loss of about £600 through this dire disease. All the farmers whom I speak to on the subject tell me the same story with regard to the veterinary surgeons, that the only answer they can get from them is, to "kill the sheep, as there is no cure." If that sort of treatment is to be adopted, no cure is likely to be discovered.

As a subscriber to the VETERINARY JOURNAL, it has been a marvel to me that during the time that this disease of Rot in the livers has been working such ravages among the flocks in the Midland counties, there has been no correspondence on the subject except one letter, that I can recollect, many months ago, or notices of attempts even of treatment and cure of this complaint. Until the veterinary profession will turn their attention to the subject no cure is likely to be found, unless the doctors will kindly come to our aid with their scientific knowledge; but unless that happens, I fear the farmers will have to be content to "grin and bear it." As to it not paying to doctor sheep, I cannot believe that to be the case when the losses are on the present scale of magnitude. I have the honour to be, sir,

Your obedient servant,

Scaldwell, Northampton, *January 24th.* ROBERT SOAMES.

*To the Editor of the Northampton Herald.*

Drayton Lodge, Daventry, *January 20th*, 1880.

SIR,—As your paper is largely circulated amongst farmers, I wish to make a few remarks respecting the general rot in sheep. I keep a flock of about 600, and I have lost 314 breeding sheep, and now my tegs are going. I sent a liver of one to a celebrated veterinary surgeon at Northampton, and had he examined the liver, and sent me his opinion, I would gladly have paid him a two-guinea fee, but he did not think it worth his notice. I have found it a difficulty to get a veterinary surgeon to go into the diseases of sheep. They say it does not pay; so one of the best sources of a farmer's income is not worth their notice. I mean to say that the present knowledge of veterinary surgeons upon the diseases of sheep is not to the credit of the profession. I have often said to veterinary surgeons, "Why do you not study

the diseases of sheep?" They candidly say it does not answer to doctor sheep. As far as that goes, perhaps the knife is the best remedy; yet, at the same time, I think the profession ought to have a remedy for the rot before this time. I have been a breeder of sheep for forty years, and I think I may say I have had quite an average flock, and I do not spare the cake bill; but here I am losing my flock, and our veterinary surgeons stand by helpless to assist me. . . . . The cattle plague was a dreadful thing to us farmers, but the present rot in sheep is ten times worse. You may go along roads here and you will scarcely see any sheep left; and how we farmers are to pay our rents without sheep, I hope some one with a wiser head than mine will tell. This national calamity ought to have been noticed by the authorities, and action ought to have been taken by some competent body under Government; but all we hear is a sigh from the sufferers from this dreadful pest.

Yours truly,
GEORGE EMERY.

[We sympathise most heartily with the farmers in their many most serious misfortunes, and especially with regard to their losses from diseases among their herds and flocks. As our correspondent and the whole agricultural community will be ready to admit, we have done our utmost to protect them from the ravages of contagious maladies, and in this respect we have been very much in advance of not only public, but even of official veterinary opinion. It has also been for many years a matter for regret that the disorders of the ox, sheep, dog, and pig have not been more carefully studied and taught. But for this there are various reasons. The veterinary schools are private, it may be said, establishments which are not compelled to teach, nor have they the facilities for studying, the diseases of the ox, sheep, and pig. So that students, during the whole period of their study, may, perhaps, never see one of these animals except in the market or slaughter-house. In the next place, it does not pay so well to "doctor" these creatures as horses; and as veterinary surgeons are mortal and must live, they study that which is most profitable. And lastly, they are indeed rarely called in to minister to sheep or pigs. The shepherd is the sheep-doctor, as a rule; hence the professional man has little opportunity, if he had the will and the time, to make himself acquainted with ovine diseases. Medical men have as yet done nothing in devising measures of prevention or cure for animal scourges; indeed, the history of their attempts—as in 1865-6—is not such as to encourage the farmers to seek their aid. With regard to "Rot," we know as much about it now as we did half a century ago; and that goes to show that, like so many scourges, prevention, and not cure, is the object to be achieved. The means of prevention, and also those of cure, are enumerated in all the popular books on cattle and sheep diseases published for the last fifty years. Nothing new of a practical nature has been devised for a long time. The farmers have the remedy in their own hands, if they wish veterinary surgeons to study the disorders of sheep. Unless they and their landlords apply the necessary pressure, this study will never be made.]

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## "FARMER MILES" AND THE ECRASEUR.

*To the Editor of the* VETERINARY JOURNAL.

SIR,—At page 36 of the January number of the *Veterinarian* for the current year, I find there is a letter from a G. W. Bowler, M.D., V.S., Cincinnati, Ohio, on the "Castrating Ecraseur." In this letter he claims to know something about me, and also takes the liberty to endeavour to mislead the veterinarians of England by several direct misstatements, which I hope you will allow me to correct, or possibly some might be debarred from using the best instrument made for castration purposes—the ecraseur.

G. W. B. says, "A man calling himself Farmer Miles travels from this country to England, carrying in his coat-pocket one of our old castrating ecraseurs." This constitutes misstatement No. 1. Further, "that he imposes it upon the veterinarians over there as a new invention of his for castrating"—misstatement N. 2. Lower down, he continues, "From that date to the present, I, and also Dr. Jenning, have continued to use it, and have during all these years castrated thousands of animals of all ages without an accident or the loss of a single one," etc.—misstatement No. 3.

G. W. B. also states, "In 1873 I called on Professors Axe and Pritchard, and endeavoured to explain to them the advantages to be derived from the use of the castrating ecraseur." This may be true, for in 1879 Professor Pritchard had a castrating ecraseur like our old-fashioned ecraseurs, and did not use it; but he bought one of my improved ecraseurs. I never owned but one of the *old-fashioned* ecraseurs like those spoken of by G. W. B., and that I was glad to part with at half its original cost. But had I known that any man, or even boy eight years old, could have castrated thousands of stock *without the loss of a single one*, with such a tool, I should certainly have been tempted to keep it at any cost, instead of wasting time and money to improve on it, and get a far more satisfactory instrument.

I am well-known as a practical castrator (and more than that, I do not pretend to) from Maine to California in the U.S.A., and in Canada, England, Ireland, Scotland and part of France; and I think it strange that in the whole of my travels I have never heard of such a good old ecraseur as G. W. B. describes; nor ever even have I heard of the man himself, who apparently has done so much work for so many years.

Wilks' *Spirit of the Times*, New York City, through its veterinary editor, August 22nd, 1877, nicknamed me *Farmer Miles*, and there said, "*There is no man on the continent of America who is worthy of being compared to Mr. Miles in this respect*" (speaking of rig castration). I wonder whether he had ever heard of G. W. B. before that!!!

I have just received, unsought and very unexpectedly, the highest compliment I have ever received as a castrator, in the form of a testimonial on parchment, bearing the signatures of fifteen of the leading veterinary surgeons in Lincolnshire: two of whom are Fellows and thirteen Members of the Royal College, with the following words, "We, the undersigned veterinary surgeons practising in the county of Lincolnshire, having witnessed Mr. T. C. Miles' operations on rigling horses, desire to bear witness to the humane, scientific, and perfectly satisfactory manner in which he attains his object. We also wish to express our approval of his method of casting and securing the animal, and of the instruments he uses in the performance of the operation."

I thank the gentlemen who have signed that testimonial from my heart, and I assure them I feel amply repaid now for the troubles and anxieties I had to undergo in England, in my endeavours to enlighten the veterinarians and stockowners of that country, and I am sure many Americans will gladly join me in thanking them for such a token of respect to an American farmer and castrator. When I was in Ireland, two veterinary surgeons presented me with a very handsome gold watch "in testimony of my ability as an operator upon horses, etc.," and in Scotland and Canada, I have received many testimonials and presents, showing the appreciation in which I have ever been held by my many kind friends and employers. These compel me to trouble you with this letter, in reply to Mr. G. W. Bowler's, and to prove to the English public I am not the impostor he would appear to wish to prove me.

I remain, sir, yours obediently,

"FARMER MILES."

## THE ROYAL VETERINARY COLLEGE, AND THE ARMY VETERINARY DEPARTMENT.

*To the Editor of the* VETERINARY JOURNAL.

SIR,—Many reasons will probably be put forward to account for the very unfair treatment the Army Veterinary Department has experienced at the hands of the Horse Guards authorities, in the matter of rewards and decorations for services in the field. May I suggest one, which I fancy is not far from being correct? His Royal Highness the Field-Marshal Commanding-in-Chief is President of the Royal Veterinary College. That establishment, as the profession has only too good reason to know, degrades veterinary medicine to the lowest level by advertising the large amount of service it will give subscribers for the paltry sum of two guineas a-year, by means of its veterinary staff. If veterinary professors set so little value on their calling and their own services, can we expect the public, the Governors of the school, or its President, to hold the rank and file of the profession in respect or esteem? Assuredly not; and His Royal Highness, being aware of the trumpery value at which the school estimates the profession, by underbidding and underselling its own students, is not likely to take a favourable view of the claims of army veterinary surgeons. *Ex pede Herculem.*

Yours obediently,

*February 14th.* "FILIUS NULLIUS."

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## THE RESPONSIBILITIES OF VETERINARY SURGEONS.

*To the Editor of the* VETERINARY JOURNAL.

DEAR SIR,—In reply to Mr. Lambert, allow me, in the first place, to make it clear that I did not intend to include all in the "sweeping accusation." I am proud to record that I have met, and am acquainted with, many veterinary surgeons who would adorn the ranks of any profession, whether they be regarded as scientific men or gentlemen, and I should be extremely sorry to say one word that would unjustly reflect upon their hard-earned reputation. But is it just to regard me as an "enemy" of my profession, because I dare expose the contemptible conduct of many of its members—conduct that has come under my own observation, and given me as much pain as it would have its boasted friends?

My former letter Mr. Lambert thinks "reckless." Let us look for a moment at the evidence he advances in proof of that assertion. When I hinted that many veterinary surgeons, and some professors, can be secured to supply evidence in legal cases to meet the requirements of counsel, he simply exclaims, "Monstrous!" Peruse the Jurisprudence column of any veterinary periodical, and I fear ample material may be gathered to support my position. I am further charged with recklessness, because I ventured to state my conviction that many members of our profession are destitute of the moral sense, and here is the proof: "We all of us know that no race, even of savages the most degraded, has yet been found destitute of moral sense;" a more reckless statement I have seldom read.

The concurrent testimony of travellers and missionaries is that many races are utterly destitute of this sense. Professor Bain, with whom nearly all advanced thinkers agree upon this point, clearly proves that no race, civilised or uncivilised, possesses a moral sense, except those by whom it is cultivated, and that the standard is a matter of choice. My experience of veterinary

surgeons is, that the cultivation of the moral sense is much neglected, and their standard very low ; hence the conduct I complain of in my letter.

As to examinations for soundness, and Government inspection, I could cite many instances in which the confidence reposed in veterinary surgeons by the public and the Government is, to say the least, misplaced. I can see no advantage whatever in concealing these facts from ourselves. They must be admitted before their removal can be hoped for. About the conversation of veterinary surgeons, I should rejoice as much as Mr. Lambert if they confined it to subjects of scientific interest ; but when they boast of their dexterity in giving a ball, and other childish details in daily practice, one simply feels disgusted.

I have lived in three different parts of England during the last ten years, and in each I have found the fact of my being a veterinary surgeon created a prejudice against me; and judging from the character of our veterinary representatives in those places, I had *no* reason to complain. It is seldom a veterinary surgeon, as such, will, without other qualifications, be admitted into good society. I have found the profession in a similar condition both in Canada and the United States.

I quite agree with Mr. Lambert's remarks about independence, self-respect, and our own dignity ; and also with what he says of witnesses, especially professors, appearing in the box. Our schools are much to blame for the present unsatisfactory spirit that exists in the profession. Ask any student who has been at Camden Town during the last ten years, whether that school deserves to be called a scientific institution, or whether it is merely a "commercial concern."

Whenever our country can boast of a school, the teachers in which shall be scientific men who are removed from the necessity of, and have no desire to engage in practice, then may we look for students who will reflect the spirit of their teachers, and will scorn to sell their honour for a paltry guinea or two.

The latter part of Mr. Lambert's letter is unworthy of himself, and in order to answer it I should be under the necessity of entering into personal matters that would be unpleasant and unbecoming ; therefore I leave it untouched.

May I ask our classical friend in the north to read "Middlemarch," and study carefully the character of Bulstrode, and see whether he will learn some lessons that our profession may profitably take to heart—and especially those members of it who, like himself, shrink from exposing its defects.

By the way, the gifted authoress of that work, and who, according to the best critics, portrays the men and women we meet every day with unrivalled accuracy, introduces a veterinary surgeon, and although she does not make him play a conspicuous part, still it is quite sufficient to indicate her estimate of that gentleman's character ; and I don't think any profession would feel flattered by making Mr. "Horrocks" its representative.

Faithfully yours,

Newbury, *February 10th*, 1880. J. FRASER.

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## FALSE PLUMES, OR SPURIOUS TITLES.

*To the Editor of the* VETERINARY JOURNAL.

SIR,—Some years ago, in a West of England town, a kind of United Benefit Loan and Assurance Society was started, the secretary to which, after *Esq.*, appended the mysterious A.B. What on earth it meant no one

could divine, until one day, at a town dinner, an Oxford graduate was asked its purport. "Oh," he exclaimed, "Asinorum Baccalaureus." This gentleman was much of the same type as the Fellow of the College of Preceptors referred to in your last impression. The following advertisement has appeared lately :—

Royal Dog Infirmary, ....., S.W.

Gentlemen,—I have thoroughly tried your Forage Cakes, and find them extremely useful ; they ought to be generally used.

Yours truly,

——, F.V.M.A.L., M.R.C.V.S.

Perhaps, sir, you may assist me in explaining the meaning of F.V.M.A.L. as a prefix to M.R.C.V.S. Is it a genuine degree, granted by a Royal College, or what? I am informed a *penal clause* is to be the next move. Will it not be well, sir, to insert a clause against assumption of false plumes, spurious titles, or fictitious letter appendages, tending to throw ridicule on the qualified? The mystic letters being placed before the well-known abbreviation, the uninitiated may be led to suppose it is the higher degree. It may be so; pray, then, pardon my ignorance, and kindly enlighten me.

Yours obediently,

"Cygnus."

[We cannot give our correspondent the required information. The mystic letters may stand for everything or nothing. The story is told of a man who to his name appended the letters, F.U.D.G.E. The public smiled, many obtuse people even maliciously grinned ; but those who could compose themselves sufficiently to inquire of the learned individual what the letters meant, were consoled with the interpretation—he was a Fellow of the Universal Degree of General Education.]

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## THE COUNCIL OF THE ROYAL COLLEGE OF VETERINARY SURGEONS.

*To the Editor of the* Veterinary Journal.

Dear Sir,—Now that members of Council can be balloted for by the entire body of the veterinary profession, has the time not arrived when more equitable representation may be effected? Looking at the composition of the Council as it is at present, I find that the Camden Town school has no fewer than four of its teachers and three of its Governors in it. This is a most unequal representation, when we consider the other schools ; and it gives the Royal Veterinary College a most unfair, and even dangerous preponderance at times—as the last meeting of Council shows. The objects and interests of that school have rarely, if ever, been in harmony with those of the profession ; indeed, they have nearly always been antagonistic. In proof of this, I may ask what any of the teachers have done for many years in advancing those interests which most concern us. They have studiously held aloof from every movement intended to benefit us, and sometimes, if they have not actively, they have apparently passively opposed some of them. With procuring the new Charter I believe they had nothing to do, and not one of them holds the Fellowship degree. These are not the men who should be selected to represent us ; and I trust now that the election time is drawing near, the profession will carefully scan the claims of those proposed as members of Council. We should have loyal, earnest, and good men, and I hope we shall get them.

Yours faithfully,

"A Northern Reader."

## COMMENTS.

ARE there two Richmonds in the field? There is certainly only one W. Going in the register of the Royal College, and he is entered as located at New York; but we learn that there is also a Mr. W. Going, M.R.C.V.S., practising at Cootehill, County Cavan, Ireland. If the latter is the original Mr. Going, it is evident he cannot have *gone* to America; if he is not the true Mr. Going then *go* he should to—well, a court of justice would decide where. It is for the original W. Going to declare himself, and say whether he has a double, or if he approves of discreditable personation.

There appears to be every likelihood of one or two public abbatoirs being instituted in Dublin—a site for one having been already chosen. When will London be similarly favoured? Surely in the interests of the public and humanity, abbatoirs are as much needed in the immense modern Babylon as in Dublin!

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## TO CORRESPONDENTS.

VIRTUTE ET LABORE.—We believe an Act was passed in 1876, entitled the "Drugging of Animals Act." Any law bookseller will furnish it.

A NUMBER of communications and proceedings of societies are unavoidably held over until next month.

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## Communications, Books, Journals, etc., Received.

COMMUNICATIONS have been received from G. Kidney, Belfast; J. Wilson, Nantwich; R. Soames, Northampton; J. Rowe, London; W. A. Taylor, Manchester; G. A. Oliphant, Royal Artillery, Afghanistan; J. W. Hill, Wolverhampton; Major-General Fitzwygram, Aldershot; T. Greaves, Manchester; J. H. Steel, London; J. T. Roberts, Long Sutton; Captain Russell, Grantham; "Farmer Miles"; J. Fraser, Newbury; R. Ward, London; T. Barker, London; "Filius Nullius"; J. A. Nunn, Royal Artillery, Afghanistan; G. Mitchell, Melbourne; Mr. J. Treacy, Dundalk; W. Broughton, Leeds; "Cygnus"; J. W. Hill, Wolverhampton.

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BOOKS AND PAMPHLETS: *C. Schmidt*, Die Retention der Eihäute und ihre Folgen; *H. Putz*, Ueber Wundheilung; *D. and A. N. McAlpine*, Biological Atlas; *L. Baillet*, Traité de l'Inspection de Viandes de Boucherie; *E. Hering*, Handbuch der Thierärztlichen Operationslehre.

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JOURNALS, ETC.: *Revue Vétérinaire; Medical Press and Circular; Lancet; Recueil de Méd. Vétérinaire; Wochenschrift für Thierheilkunde und Viehzucht; Archiv für Wissenschaftliche und Practishe Thierheilkunde; Archives Vétérinaires; Annales de Méd. Vétérinaire; Mark Lane Express; Live Stock Journal; Agricultural Gazette; Farmer; Der Thierfreund; Animal World; Army and Navy Gazette; Repertorium der Thierheilkunde; L'Echo Vétérinaire; American Live Stock Journal; American Veterinary Review; Melbourne Chemist and Druggist.*

NEWSPAPERS: *Melbourne Argus; Illustrated Australian News; Melbourne Age; Freeman's Journal; Lahore Civil and Military Gazette; Army and Navy Gazette; Norfolk Chronicle; Morning Advertiser; Montreal Gazette; Belfast Advertiser; Hastings and St. Leonards Observer; Melbourne Leader; Irish Times; Leamington Spa Courier.*

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THE VETERINARY JOURNAL
AND
Annals of Comparative Pathology.

APRIL, 1880.

# PLEURITIS PURULENTA, EMPYEMA, OR PYO-THORAX IN THE HORSE.

BY GEORGE FLEMING, F.R.C.V.S., ARMY VETERINARY INSPECTOR.

THE formation of pus in idiopathic Pleurisy of the horse must be an exceedingly rare occurrence, as no mention is made of it in English veterinary literature, while it is scarcely alluded to in the writings of Continental veterinarians, so far as I can discover. And so far as my own personal experience is concerned, though I have had a fair share of cases of Pleurisy, yet until that I am about to describe presented itself, I never met with one in which suppuration of the pleural membrane was a result of the inflammation going on in it. The evidently exceeding rarity of Empyema in the horse must, therefore, be my excuse for offering the following notes of the case of troop mare B11, aged four years, belonging to the Second Life Guards. This case, in addition to furnishing us with an extraordinary—I might even say unparalleled—instance of pleural activity under the influence of inflammation, possesses several other features which are not without interest to the pathologist and surgeon.

On March 6th, 1879, the mare—a remount only recently purchased—was admitted to the hospital stables suffering from Catarrhal Fever, cases of which were then rather prevalent. There were the usual symptoms, as cough, difficulty in swallowing, nasal discharge, lachrymation, diminished secretions, dry hot mouth, injected mucous membranes, headache, inappetence and considerable prostration. The temperature was 104.2°, pulse

60, and respirations 35 per minute. The chest did not appear, on examination, to be affected to any marked extent. The ordinary treatment was prescribed.

On the 9th, the advent of Pleurisy was noted, and the temperature which had fallen to 103.2° on the 8th, was now 104.1°. On the 10th the symptoms of Pleurisy were more marked, though the inflammation was advancing in an almost imperceptible manner, the left side of the chest being chiefly involved. The temperature was 103.3°. Antipyretic medicines were administered, and hot water was applied to the sides of the chest by means of blankets, followed by mild counter-irritation. Mustard cataplasms were applied to the throat and breast. The weather was exceedingly variable: cold rain, frost and fogs, with rarely a sunshiny day; and the loose box, a temporary wooden structure, had a northerly aspect and was extremely uncomfortable.

March 11th. The fæces were of a dull brick-red colour, hard and dry; temperature 102.4°. Enemas were frequently administered, and a saline laxative given. On the evening of the 12th, the mare lay down, but soon got up again and appeared to be much worse than she had yet been. Temperature 104.2, pulse 78, respirations 28. Ammonia carbonate and tincture of aconite, were given alternately in small and frequently repeated doses.

On the 13th the more urgent thoracic symptoms appeared to be relieved. Temperature 102.3°, pulse 56, resp. 15. There was sub-thoracic effusion to some extent. Next day there appeared to be great improvement; temperature 101.2°, pulse 56, respiration normal. Until the 17th this amendment continued, and the pleuritic symptoms had disappeared. During the night of the 16th-17th, the external temperature fell very low and the cold was bitter. In the morning it was found that the mare was suffering from a relapse, notwithstanding the protection she was receiving from blankets and woollen bandages. The temperature was up to 102.3°, the pulse and respiration increased, the latter being chiefly abdominal. Next day the pulse was 60, resp. 40, and temperature 103.2°; the symptoms of Pleurisy were very marked, and there were physical signs of pleural effusion. On the 19th the effusion had increased; temperature 104.1°, pulse 73, resp. 36, no appetite. The mare had to be

fed with oatmeal and flour gruel, as well as a soup made of Warnecke's horse biscuit, which I can heartily recommend as a food for sick horses; it kept this mare alive for a long time. Small and frequent doses of Ol. terebinth were given in the soup, in addition to Ammon. acet. Charcoal stoves were placed in the box to raise the temperature, which was below freezing point.

On the 22nd there was much sub-thoracic effusion. Since the relapse there was complete loss of appetite, and the mare had to be drenched with gruel and biscuit soup to keep her alive. As there was distinct evidence that inter-thoracic effusion was going on, it was suggested that the treatment recommended by Schroth, the German physician, should be tried. This consists in producing inspissation of the blood by diminishing the supply of water going to it, instead of attempting to abstract the water from it, by feeding the patient upon the driest food possible and allowing scarcely any water to drink.

But this *régime* could not be carried out, as the animal would not eat food of any kind; and, as debility was now becoming a prominent symptom, food had to be administered, and this could not, of course, be given in a dry state. In such circumstances it is evident that Schroth's inspissating treatment cannot be carried into operation.

On the 23rd, the sub-thoracic effusion was very extensive, and the fore legs were tumified, from subcutaneous infiltration. The chest was deeply scarified, in order that the effusion—extra and intra-thoracic—might escape to some extent. The hot water to the sides of the chest had to be discontinued, as the skin had become rather tender.

Up to the 27th the treatment varied, according to the indications; and the animal was better one day, worse the next, the weather being inclement and baffling. On this date, the symptoms were more serious than they had yet been. The debility was great, while the distress in breathing was extreme. Temperature 103°, pulse 80, respirations 26. Next day exploration of the chest revealed the existence of a large quantity of fluid in its cavity. There was absolute dulness on percussion of the lower half of both sides of the thorax, with absence of

the respiratory murmur over the corresponding extent, and the breathing was extremely laboured. As the mare could not live for many hours unless relieved, I decided on performing paracentesis thoracis, and removing as much of the fluid as possible from the chest by means of the Aspirator. I was not aware of this instrument having been employed in Hydrothorax in the horse, so determined to give it a trial. Messrs. Arnold, instrument makers of West Smithfield, kindly lent me one of their strongest aspirators, which, though made for use in human surgery, yet answered my purpose tolerably well. The needle was introduced into the right side of the chest, behind the ninth rib, and about eight inches above the sternum. After a considerable time, but with little difficulty, about twenty quarts (five gallons) of citron, or rather orange-coloured and somewhat fibrinous fluid were withdrawn, to the great relief of the mare. The right side was selected for the operation, as the pleura there was less involved than on the left side. No air could obtain admission into the chest through the cannulated needle, and the aspiration was sufficiently powerful to pull small shreds of lymph into the bottle. To facilitate the introduction of the needle, a very small notch was previously made through the skin by rowelling scissors, and the needle was carefully pushed through the chest wall by a steady and slightly rotatory movement.

Stimulants, diuretics, and an abundance of nourishing gruel were administered.

The following morning, the night having been wretchedly cold, there was again much distress in breathing, and auscultation and percussion demonstrated that there was still a large quantity of fluid in the chest, which it was necessary to remove to a considerable extent. The aspirator needle was passed into the left side, a little lower than it had been on the right side, when, to my great astonishment, thick white pus began to flow like cream into the receiving bottle. Ten quarts (2½ gallons!) were removed before the needle was withdrawn. The temperature was, immediately before the operation, 102.1°, pulse 76, and respirations 26.

There was no desire to eat, so the mare continued to be fed with biscuit soup and flour and oatmeal gruel. The carbonate

and acetate of ammonia were given in small and often repeated doses, with Ol. terebinth.

On the 30th it was very manifest that yesterday's operation had afforded great relief. The respiration was very much easier, and the movements reduced to 20 per minute; the temperature was about normal (100.4°), and the pulse 64. The mare voluntarily ate two bran mashes, and drank a large quantity of biscuit soup. Ferruginous and vegetable tonics, with the stimulants and Ol. terebinth were given. The animal lay down during the night, for the first time since the symptoms of Pleurisy were noticed. Next morning, however, the weather being as inclement, she was not so well; the temperature was 101.2° pulse 72, respirations 24; and on the following day (April 1st) she was worse, the respirations being again increased to 28 per minute, and the respiratory movements laboured and discordant. The temperature was 101.2°, and pulse 82. The left side of the chest was again punctured by the needle of the aspirator, but only two quarts (half-a-gallon) of very thick pus were removed. As auscultation and percussion demonstrated that the quantity of fluid yet in the thorax was very great, and that adhesions between the two pleuræ on the left side probably formed an obstacle to its abstraction, the needle was introduced into the right side, when fourteen quarts (3½ gallons) of thinner pus were obtained. The mare exhibited signs of exhaustion after the operation, and received a large dose of Ammon. acet. Almost immediately afterwards she began to look cheerful and to eat heartily. Next morning, but for the emaciation, few persons could have told there was anything amiss with her; she lay down and fed well. Temperature 100.4°, pulse 78, respirations 22.

*April 3rd.*—The symptoms and physical exploration testified that a considerable portion of the chest space was occupied by fluid. Temperature 101.1°, pulse 66, respirations 20. Four quarts (1 gallon) of very thick creamy pus was drawn from the right side by the aspirator. Relief was immediately afforded, as before.

*April 5th.*—Another accumulation of fluid in the chest. Removed two quarts (half-a-gallon) of pus from the right side. Mare again relieved; eating voluntarily, and lying down.

*April 7th.*—There appears to be considerable abdominal or

diaphragmatic pain. Applied the aspirator, and removed five quarts (1¼ gallons) of pus from the lower part of the left side of the chest. Temperature 103.2°, pulse 82, respirations 28. The mare lay down soon after the operation and ate voluntarily, which she did not do whenever the fluid became abundant. Next day the temperature was 101.3°, pulse 66, respirations 22. The appetite was good, mashes and hay being eaten on this and following days, and she lay down and rested for considerable periods during the day and night.

*April 9th.*—The sub-thoracic effusion, which had hitherto been very extensive, suddenly and completely disappeared. Temperature 101.1°, pulse 68, respirations 20.

*April 10th.*—Continued improvement. Jerking up hind legs, and breathing as if suffering from abdominal or diaphragmatic pain, which continued on the 11th, and for which special treatment was prescribed.

*April 12th.*—Weather extremely cold and unpropitious. The mare's breathing was again somewhat laboured. She lay down for a short time and appeared exhausted ; legs and body cold. A strong diffusible stimulant was given, and friction applied to the limbs. Soon after this she arose and began to eat, and the breathing became tranquil.

*April 28th.*—Up to this date the symptoms had been, on the whole, favourable, though they varied with the weather, which at times was most discouraging. The temperature did not exceed 101°, the pulse fell to 50, and the respirations were not at any time more than 20. Iron and vegetable tonics had been administered during the whole time, with ale and stout. Towards the end of the month, the cold was bitter and the air very damp, and, notwithstanding the presence of the charcoal stoves, clothing and bandages, it was impossible to keep the mare from chills. On this day, there was ample evidence that fluid had once more collected in the chest, and the aspirator being again applied, five quarts (1¼ gallons) of thick pus were drawn from the left side. Temperature 101.4°, pulse 74, respirations 19. Afterwards there was relief, and the animal ate well. On the 30th there was marked discordance in the respiratory movements. Temperature 101.3°, pulse 79, respirations 19.

*May 1st.*—Unfavourable symptoms again appearing. Punctured the left side of the chest, and removed four quarts (1 gallon) of pus, so thick and viscid, and containing so many dense clots (inspissated pus), that I had to desist and try the right side, near the floor of the cavity. Here, also, the fluid was so dense and lumpy that the suction of the aspirator failed to draw it through the largest needle. There was very great substernal Œdema, and for this scarifying was again resorted to.

*May 2nd.*—The limbs, especially the anterior ones, were much swollen, the swelling being hard and erysipelatous. The appetite was good, and the mare no worse.

*May 3rd.*—The tumefaction beneath the chest has disappeared, but the limbs are more swollen; still feeding well. Temperature 100.4°, pulse 72, respirations 22.

*May 5th.*—Yesterday and last evening the mare appeared to be livelier, and eating better than usual. She moved about the box freely, and seemed to be in every way better. At 5 this morning, when the stable guard visited her she appeared to be well; half-an-hour later she suddenly fell, and died in a few minutes.

The *autopsy* was made a few hours after death. The mucous membrane of the intestinal canal, as well as that of the vagina, had a deep yellow tinge, and was marked throughout with dark petechial stains. The pleuræ costalis and pulmonalis on the left side were so closely adherent, that the latter was torn off in removing the lungs. The texture of these organs was unaltered, and both were quite crepitant throughout, the left being only the seat of slight hypostatic congestion. Their volume, however, was wonderfully diminished, and pressed, as they were, against the roof of the chest cavity, they did not occupy more than one-half of its space. Large masses of inspissated pus, like the curd of milk, weighing perhaps about eight or ten pounds, lay in the floor of the chest, among a quantity of serum or liquor puris. The pleura investing the other portions of the lung and pericardium, and covering the diaphragm and right costal wall, as well as that forming the mediastium, were covered with a thick puriform exudate which gave the cavity and its contained organs a strange appearance—like that of the interior of some monster abscess.

The heart, externally and internally, was flecked with petechiæ, and there were other indications in the mucous membranes, kidneys and liver, that the blood had suffered deterioration during the long continued and most extensive pyogenic process going on in the chest.

The animal was kept alive for the comparatively long period between the first employment of the aspirator until death took place, by careful feeding and nursing, but more especially by the oft-repeated removal of the fluid formed in the chest whenever severe dyspnœa showed that asphyxia was imminent, through compression of the lungs. To this repeated, though never complete, evacuation of the chest (eight operations), was also doubtless due the pervious condition of the lungs, the alveoli of which had not time to become obliterated in the intervals.

I think there can scarcely be a doubt that in this case recovery would have been the result, had the weather and the accommodation been more favourable. The relapses always coincided with a sudden fall in the temperature to near or below freezing point; and as this could not be guarded against in the exposed loose box, the fact of its recurrence could only be noted.

This being the first time, I believe, in which the aspirator has been employed in the operation of *paracentesis thoracis* in animals, I am inclined to give the instrument a very strong recommendation. The safety with which it can be employed, the very small wound the needle makes, the powerful suction it exerts, and by which fluid can be removed from other than dependent parts, the frequency with which the needle can be introduced without any great injury to the intercostal muscles and pleura, and the impossibility of air gaining admission to the pleural cavities, as well as the cleanly and scientific-looking character of the operation, are entirely in favour of this instrument.

But some important alterations and improvements are needed in the present pattern, which is only intended for human surgery, before it can be looked upon as a veterinary aspirator, and especially for evacuating fluid in the chest. These alterations I intend to suggest to Messrs. Arnold, and it is to be hoped that veterinary surgeons, when they have the opportunity, may be induced to employ the aspirator instead of the dangerous, pain-

producing, inefficient, and barbarous-looking chest trocar and cannula.

Another point of interest in the above case, is the immense quantity of pus formed in the chest, and without the access of external air to its cavities. Altogether, *there were at least* 15½ *gallons of fluid* removed by the aspirator, and of this about *eleven gallons were pure pus*, drawn at seven operations. The purulent effusion was nearly always so thick and cohesive, that it could only be slowly drawn through the cannulated needle, and at last it was so dense that the suction of the aspirator could not withdraw it.

I may mention that the case was seen by a number of professional colleagues who visited me at St. John's Wood Barracks, among whom were Messrs. Robertson, Kelso; Billings, Berlin; Lyford, Montreal; Rowe, Shave, and Shaw, London; some of whom assisted me in the operation.

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## OSTEO-POROSIS.

BY H. J. CARTWRIGHT, F.R.C.V.S., WOLVERHAMPTON.

On February 4th I was requested to visit Eaton Stud Paddocks, and make a *post-mortem* examination of a yearling colt, the property of the Duke of Westminster. On my arrival I learned that the colt, a most valuable one, by "Blair Athol," had been found dead in his box that morning, although he had shown no signs of ill health the previous evening, neither were there any marks of struggling, the bedding being quite undisturbed. All the internal organs were healthy, but there were comminuted fractures of both femurs, as well as of each humerus and two of the ribs. The fractures took various directions through the shafts of the bones. There was a large amount of coagulated blood around the fractures; more especially was this the case in the hind extremities, where quite a large sac full of blood had been formed in the surrounding muscles. The medullary canal was enlarged and full of reddish-coloured substance of the consistence of cheese. The compact tissue entering into the formation of the shafts of the bones was very thin, being

barely the eighth part of an inch in thickness, and the periosteum was easily peeled off.

[This was undoubtedly a case of Osteo-porosis, or, more properly speaking, *Fragilitas Ossium*; there being not only atrophy and degeneration, but also morbid brittleness of the bones.]

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## ANTHRAX FEVER, OR LOODIANAH DISEASE, IN INDIA; ITS SYMPTOMS, TREATMENT, CAUSE, AND PREVENTION.

BY JAMES MILLS, M.R.C.V.S., ROYAL HORSE ARTILLERY.

ANYTHING more important for the well-being of our army in India, and for the maintenance of its cavalry and artillery in perfect condition, for immediate service whenever and wherever wanted, cannot be conceived, except in keeping and maintaining the horses appertaining to both these branches in good working order, for which the scientific veterinary surgeons attached to the various corps are in the main responsible. Therefore it is our duty, when disease does occur, to thoroughly investigate it, and to make known to each other the result of such investigations, so as to enable us to grapple in an able manner with maladies as they arise, and to produce results alike gratifying to ourselves and all concerned. Thoroughly believing in this, I entertain a hope that the few remarks which I shall offer on this disease, as it presented itself to me on the occasion of two outbreaks which came under my notice while serving in India, may not be unacceptable to the readers of the VETERINARY JOURNAL, and more especially to those who aspire to Indian military fame.

It is my intention in writing this to embody the report which I made at the time of the first outbreak, and to add what further information I have gleaned since.

Both outbreaks took place at the station of Bareilly, in the Rohilkund district—the first in 1877, and the second the following year (1878), just after the rainy season.

This disease, commonly known as "Loodiana Disease" in

India, is an equine scourge which most veterinary surgeons in that country are acquainted with to a certain extent, and to which, for some time, great importance has been ascribed by most veterinarians there, and to the proper elucidation of which a certain degree of interest must attach; for it ought to offer the service of not only disinterring a slight amount of useful truth, but of overturning erroneous ideas, which lead to mistakes equally troublesome in their results to the practitioner and the patient.

Copy of report on first outbreak, with a few alterations and additions:—

"On the 16th September, 1877, Loodiana Disease of a most severe type made its appearance amongst the horses of 'C' Battery, 5th Brigade, R.A.; it raged with more or less intermission until the 15th October, when it was checked; and on the 24th September it showed itself amongst the grass-cutters' ponies belonging to the battery.

"On the 4th October it broke out in the 18th Bengal Cavalry, also stationed at Bareilly, but only made slow progress in that regiment until the 25th of the same month, when it stopped.

"On the 19th October it attacked a horse belonging to a private individual in the station—making a total of thirty-five animals attacked within a period of thirty-four days: thus, R.A.—twenty-six; grass-cutters' ponies, R.A., three; 18th B.C., five; private individuals, one (see Return No. 1).

No. 1.—Return showing the number of cases of Loodiana Fever that occurred at the Station of Bareilly during the years of 1877 and 1878.

| Belonging to | Total Number of Admissions. | Cured. | Died. | Remarks. |
|---|---|---|---|---|
| Royal Artillery ... ... | 26 | 17 | 9 | 1877. |
| ditto ... ... | 6 | 4 | 2 | 1878. |
| Grass-cutters' Ponies ... | 3 | 0 | 3 | 1877. |
| 18th Bengal Cavalry ... | 5 | 4 | 1 | 1877. |
| ditto ... | 1 | 1 | 0 | 1878. |
| Private individuals in the station ... ... | 1 | 1 | 0 | 1877. |
| Total | 42 | 27 | 15 | |

"JAMES MILLS, V.S., R.H.A."

*Definition.*—A febrile disease of a most malignant type, due to the presence of bacteria in the blood, producing a strong disposition to putrescency of the fluids and solids of the body. It commences suddenly, runs its course rapidly, and often, in spite of every care, proves fatal, and invariably assumes an epizoötic form.

*Symptoms.*—The first symptom noticeable about an affected animal is, when the "feed" is sounded, he does not prick up his ears and neigh as is his usual wont, but stands dull and listless; and when the feed is offered he will not touch it.

Very frequently, when you are asked to see the patient, you will find him down, with the head turned either to the right or left, looking towards the abdomen with an appearance of heaviness or semi-lethargy, not unlike a cow in Milk Fever. There seems to be immediate depression of physical strength, and an almost total loss of nervous energy; so much so, that in many cases it is with difficulty you can get the patient to walk from the stables to the "sick lines."

The pulse is quick and frequent, ranging from 55 beats per minute and upwards, depending on the severity of the attack.

The respirations are hurried and laboured, with marked increase in the temperature of the body.

The tongue is at first white and clammy, but it gradually becomes like a piece of raw beef, with the papillæ intensely injected.

Throughout the course of the disease, the brain and the thoracic and abdominal viscera become more or less implicated, in fact, it would be difficult indeed to know what organ, or set of organs, suffers most, as it seems to affect them all; but there is little doubt that those of a highly vascular nature, or those already weakened by previous disease, are most likely to be affected.

The cerebral symptoms are similar to those of Phrenitis and Apoplexy.

*Apoplexy.*—When the brain is affected, the patient is most violent, or may look stupid, as if gazing at some imaginary object, with marked suffusion or prominence of the eyes; and if the case is a bad one, at length apoplectic symptoms set in, the breathing becomes slow, deep, and stertorous, the pulse slower, and the skin covered with a cold clammy perspiration. Where

this is present, the prognosis cannot be by any means favourable.

*Thoracic Symptoms.*—In the most intense cases the air-cells of the lungs become clogged with a viscid mucus, preventing the due arterialisation of the blood, producing oppressed and difficult breathing; mucous membrane of mouth and eyes of a livid or dusky hue, pupils dilated, the patient presenting a most anxious appearance. The functions of the brain become gradually more and more embarrassed, when a total deprivation of all sense and motion seems to set in—in fact, the animal is now in a state of coma. The extremities feel cold, and in a short time death supervenes from the destructive effect of the mal-oxygenated blood upon the brain and nervous system.

*Abdominal Complications.*—We are aware that the mucous membrane of the bowels is that which in fever is most liable to take on diseased action. This, of course, is easily accounted for, owing to their great vascularity; therefore it denotes that particular attention must be paid to them.

The fæces voided at first are of a yellowish-brown colour, and coated with mucus, and rarely of a constipated character. As a rule, you will find the bowels rather relaxed, but a great deal depends on the description of food the animal has been getting previous to the outset of the attack, and also whether there are enteric complications present or not; when due to the latter cause, we always have great fœtor from the fæces. If ulceration of the bowels sets in, it is almost certain to be attended with diarrhœa of a most obstinate character, resulting from the irritation produced by the presence of these ulcers. This diarrhœa will probably continue so long as the intestinal ulceration exists. In such cases the excrement becomes black, and contains quantities of bloody mucus; there is also great pain evinced during the act of defæcation, the patient arches the back, and emits a groan of agony.

The hepatic symptoms are well marked from the first, by the yellow appearance of the mucous membranes. The excretory functions of the liver seem to be suspended *pro tempore*, the bile is consequently retained in the blood and diffused throughout the system—this accounts, I think, for this abnormal tint given to

the membranes. What makes me ascribe this tinging to the liver is, that as soon as we can get that organ to act properly, the visible mucous membranes begin to assume their natural hue.

The urinary apparatus, when affected, causes great suffering to the patient. The urine at first is of a saffron colour, but as the disease progresses, it is gradually voided with more and more pain, at longer intervals, in smaller quantities, and quite thick—in fact, I can compare its appearance to nothing but linseed oil; it seems loaded with solid matter, and emits a very strong odour. Further on the colour of the urine becomes much darker, and is mixed with blood, and in bad cases, where the animal lingers on for a time, it looks as if it were quite putrid, accompanied with a fearful stench. If this bloody urine be allowed to stand for a time, it will deposit a coagulum at the bottom of the vessel, similar to that shewn in Hæmaturia; this is, no doubt, brought about by the extensive inflammation existing in the urinary organs. The peritoneum becomes highly inflamed, and on the slightest pressure in that region the animal shows immediate signs of pain.

The sensibility to heat and cold is greatly augmented in this disease—the skin and mucous membranes seem to be then in a certain state of hyper-action, and are consequently much more easily acted on by cold, and in that way inflammation of the internal structures of the body is set up.

*Temperature.*—As one of the principal symptoms (at least the most marked one) from the very onset of the attack, we have the temperature of the body increased. Great attention must be paid to this, as it serves as a good guide as to the termination of the malady. If the temperature is still very high after the second or third day, the case may be looked upon as a most serious one; but on the other hand, if it is gradually diminishing, you may expect recovery, unless the patient dies from the after effects of the disease.

What is most to be dreaded of all is œdema of the head and upper air-passages, which generally extends down to between the fore-legs. This infiltration of serum into the areolar tissue, is liable to affect any part of the body; but when the throat is

involved, the case assumes a very grave aspect, and as the swelling goes on, the patient gradually shows signs of suffocation (from the obstruction of the free passage of air into the lungs), which becomes more and more severe, and if not speedily relieved, death will ensue in a very short time. The animal when thus affected presents a most pitiable appearance, the head is immensely swollen, the eyelids closed, the tongue protruding from the mouth, black and tumefied, with a discharge from the eyes and nasal chambers of an amber colour, composed of serum and mucus. In cases where this symptom shows itself, very little hope of success in the treatment may be expected.

The disease is most likely to assume the most aggravated form in previously unhealthy constitutions. In such subjects the symptoms are most obstinate from the first, and rarely yield to treatment of any kind.

In favourable cases, a healthy crisis will begin to manifest itself in about nine or ten days, and convalescence will then set in, though sometimes slowly, the patient being left in a state of extreme debility, of course. I mention nine or ten days as about the average, as some cases are of short duration, and others protracted.

In some cases putrefaction sets in before death. The stench from the patient when this takes place is simply intolerable, taking complete possession of one's olfactory apparatus at a long distance off. This was well illustrated during the second outbreak at Bareilly, in one subject which lingered on a whole fortnight, passing through every possible stage of the disease before death came to the rescue. The sight was a most heart-rending one: she was a fine young mare, and fought bravely against it, until she dropped a mass of putrefaction, so much so that it was almost impossible to make a *post-mortem* examination of her. This patient had all the symptoms of Enteric Fever, and had several attacks of Gastro-enteritis, which diagnosis was correct, as shown by the ulcerated state of Peyers and the solitary glands of the intestines. There was also violent bleeding from the nose and mouth, the blood being as black as tar; there were also petechial spots previous to death.

(*To be continued.*)

## EXTRAORDINARY LACTATION IN BITCHES.

BY PROFESSOR WALLEY, EDINBURGH VETERINARY COLLEGE.

1. "ROSA," a small, rough-haired terrier (probably Yorkshire), nine years old, and having had no puppies for upwards of eight years, affiliated a kitten, which had been brought by its mother and deposited in the kitchen of her owner's house, and allowed the cat to pay daily visits to her kennel for the purpose of suckling her offspring. About a fortnight after the adoption of the kitten, Rosa chased the mother away, when it was found—a day or two subsequently—that lactation in one of her posterior mammæ had taken place. She continues suckling the kitten yet.

2. Another terrier bitch commenced several months ago to suck her own mammæ, lactation becoming very active, and the flow of milk copious. She is nine years old, and has never been pregnant.

A parallel case to the first-mentioned was some time ago related to me by Mr. W. A. Taylor, of Manchester, the foster-mother being a greyhound, the suckling a fox-terrier puppy; but in this instance only about nine or twelve months had elapsed from the period of lactation.

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## TETANUS IN A COW FROM VAGINAL INJURY.

BY J. WOODROFFE HILL, F.R.C.V.S., WOLVERHAMPTON.

ON the 5th February, I was summoned to a milch cow belonging to John Jones, Esq., Mayor of Wolverhampton, supposed to be suffering from obstruction of the bowels. On my arrival I found the animal presenting all the aggravated symptoms of Tetanus —the jaws completely locked, the head and neck extended, the whole body rigid; and in turning, the most fearful excitement was manifested, and the creature fell down, as it were, in one piece.

She strained excessively, passing nothing but flatus; but this I attributed more to excitement than obstruction, or from some

internal irritant. I was at first under the impression that exposure to cold in the field during the day had given rise to the Tetanus; but of this I was subsequently undeceived.

An aperient was administered, counter-irritation applied to the spine, and perfect quietude enjoined. On my arrival next morning, she was still lying; the neck was not so rigid, and the jaws were relaxed to a slight extent. Still, the nose was carried out, and the *membrana nictitans* protruded over the eye on turning the head. Some small portions of fœculant matter, coated with mucus, and hard, had been evacuated. The straining continued, and there was more evident internal irritation and pain. I ordered a little febrifuge medicine, with quietude as before. In the evening she appeared decidedly better; the rigidity had disappeared, the neck was flexible, and the jaws could be opened some distance without excitement. She was, however, still unable to rise. No further passage of fæces having taken place, I ordered enemas, and no food except gruel. Early the following morning she was found dead, and had doubtless expired in great agony. She was lying squat on the abdomen, the hind legs stretched out on each side behind her, the hocks flexed, and the toes dug into the ground. The rectum was considerably protruded and red, and the vagina partially everted. The head was twisted round sideways to the right, and the face distorted. The poor creature had evidently died straining violently.

A *post-mortem* examination revealed the heart filled with black blood, and the blood-vessels generally were gorged with black, sticky blood. Lungs and liver congested. The gall-bladder was distended, and contained two half-pint bottles of bile, nearly black, and like treacle. Within the stomach was a large quantity of fluid ingesta, and there existed no stoppage throughout the intestines; but there was slight inflammation of the terminal portion. At this stage I left the subject, taking with me the bile and portions of the heart for examination.

When at home, thinking the case over, the thought suddenly flashed across my mind as to the cause of the violent straining—that perhaps the animal had sustained some vaginal injury, probably, as I suggested, maliciously. I therefore again visited the yard, and had the vagina carefully cut out and laid open,

when the origin of this symptom, and the consequent lockjaw, was at once palpable. Three lacerated wounds, one of which completely penetrated the wall of the vagina, were present. One existed on either side of the vagina, the third on the floor, between the two. The nearest was about five inches from the orifice. Considerable inflammation existed for some distance beyond, with serous effusion. Through the ruptured wall was a large amount of clotted blood. The injury had doubtless been caused by the violent insertion of a stick, or some similar instrument. At present the perpetrator of the brutal offence is undiscovered, but it is to be hoped he will be brought to justice, and punished as he richly deserves.

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## A FATAL DISEASE IN FOWLS.

BY A. GUNN, M.R.C.V.S., BALLOAN, BEAULY.

I SEND enclosed in a small box the diseased liver and a portion of the intestine of a fowl, and I am very anxious to have your kind assistance to elucidate the nature and cause of the malady.

This Fowl Disease was first noticed some two years ago, at a farm a few miles from here. I was then asked my opinion regarding the cause of the fatal disorder.

I made a careful inspection of the poultry-house, the water, the food, and the surrounding buildings, but could not find anything to throw light on the cause or origin of the malady.

After repeated and close observations, I find the symptoms presented by the affected bird are as follows:—Drooping wing and tail, great dulness, and a disinclination to wander about, excessive thirst, appetite does not seem to be impaired, comb becomes dark when the bird is about to succumb, no Diarrhœa; on a warm day the affected bird will lie and bask in the sun for hours. The duration of the disease, from the time the bird is first noticed, extends over an indefinite period—from two to four weeks. The birds that are allowed to die are very much emaciated.

I have repeatedly made a microscopic examination, with the expectation of finding parasites, but this has proved futile.

Some of the nodules in the liver and intestines are hard, and when cut with the knife feel gritty, and resemble in some respects the nodules of tuburcle. In some cases the whole of the intestines are covered with these nodules, as in the part I send.

At my request the poultry-house was completely gutted, thoroughly cleansed and disinfected, the whole of the birds killed, and a new stock brought in; but all to no purpose, as the disease again appeared. Age makes no difference. As to treatment, Chloride of Sodium was tried, as also Ferri Sulph., but without any good results.

Should you think this of any interest to the profession, I will be glad if you can give it a corner in the VETERINARY JOURNAL, with any remarks which you may make regarding the cause of the disease.

[Mr. Banham reports :—" The specimen sent was one of very common occurrence at the Brown Institution. Mr. Duguid used to call it 'cheesy deposit,' for want of a better name, I suppose. The cause of it is unknown to us, and its cure, so far as we can see, is as little known. The deposits appear to take place most frequently in the mouth, but are generally followed by others situated in some of the more vital parts, such as the intestines, peritoneum, or liver, and the disease is then of course incurable. It seems to be transmissible from one bird to another. I have frequently examined these nodules microscopically, but could detect nothing except cells resembling white blood-corpuscles, and granular *detritus*. My usual advice is to kill the affected ones at once, fatten the others as soon as possible, thoroughly clean and disinfect the houses, etc., and not re-stock for some time.

As Mr. Banham remarks, this disease of poultry is far from uncommon, and it is somewhat surprising that its fatality and destructiveness has not drawn more attention to it in this country, in order to elucidate its nature and devise measures of prevention. Though it has been neglected by us, yet it has received careful study by our Continental colleagues, and to these we refer for information. The disease is occasioned by a minute organism to which the name of *Psorosperm* was first given by Müller (*Müller's Archiv*, 1841, p. 477), and *Gregarine* by some subsequent investigators. The authorities who have made the subject of

"Psorospermism" or "Gregarinism" a special study, are very numerous, and the result of their researches proves that the entozoön is found in a large number of animals, in some of which it occasions serious disturbances, through invading important organs and tissues. First observed in fish, it was subsequently discovered in worms, insects, rabbits (particularly in the liver), then in mankind (especially in the intestines, liver, kidneys, and hair), monkeys, cattle, mice, dogs, poultry, and cats. The Psorosperm assumes four slightly different forms, one of which, found in muscle, is known as "Miescher's" or "Rainey's bodies." So long ago as 1835, Creplin noticed one of the forms—the *Navicell* or *Pseudo-navicell*—in the gills of the *Cyprinus rutilus* (*Archiv für Naturgeschichte*, 1842), and another form was first observed in the muscles of the mouse by Miescher in 1843, who described it as a utricle, the same form being afterwards found by Rainey in the muscles of a pig (*Philosophical Transactions*, 1857). Many others have found the same form in pig's flesh; others have discovered it in the sheep, goat, cattle, horses, poultry, mice, and rats; though not in mankind, dogs, or cats.

Perhaps the best description of Gregarinism or Psorospermism in the domestic animals, and especially poultry, is that given by Professors Rivolta and Silvestrini (*Il Medico Veterinario*, 1869, p. 203). In 1872 and 1873, these veterinarians investigated an extensive outbreak of Psorospermism or Gregarinosis among fowls in the neighbourhood of Pisa, and they enumerate no fewer than six different forms of the disease:—1. *Croupous Psorospermic Laryngitis*, in which the fowls were dull and had less appetite for some days, breathed with difficulty and noise, and finally died of suffocation. The mucous membrane of the larynx was red, studded with white granulations, and covered with exudate and epithelial cells. In severer cases a croupous membrane had formed in the larynx. In the pseudo-membranes, as well as in the epithelial cells, were masses of Psorosperms. 2. *Psorospermic Catarrh* or *Rhinitis*. The penetration of the Psorosperms into the nasal mucous membrane gives rise to great irritation, followed by redness, tumefaction, and the secretion of a yellow mucus. Respiration becomes very difficult, and the fowls die of Asphyxia. 3. *Croupous Inflammation of the Oral Mucous Membrane*. This is

characterised by the formation of a pseudo-membrane on the tongue and in the pharynx, which hinders the birds from swallowing, and they perish from inanition. 4. *Croupous Conjunctivitis.* This occurs when the Psorosperms enter the conjunctiva. It commences with hyperæmia and tumefaction, then ensues suppuration, and the appearance of a croupous membrane; the cornea is often involved and becomes ulcerated. When the exudate is removed, a new deposit occurs in from twelve to twenty-four hours. 5. *Psorospermosis of the Comb.* In this part the Psorosperm sets up serious irritation, and crusts of a brown colour and somewhat conical shape form thereon. In these crusts and in the epidermic cells, as well as in the Malpighian glands, are multitudes of Psorosperms. 6. *Psorospermic Enteritis.* This is seldom primary, and generally it is secondary to either or all of the first three forms. The fowls are dull, lose their appetite, and become emaciated; the feathers are lustreless, and the fæces soft, then fluid. As the disease progresses, the fowls become apathetic and stupid; they are disinclined to move; in a few days they are very emaciated and quickly die. When the Enteritis is primary, its course is less rapid than when it is complicated with any of the other forms. When examined, the body is so wasted that the intestines can be seen through the skin. In the intestinal mucous membrane are found white points or nodules, the size of a poppy-seed, scattered irregularly over its surface. The liver is also generally studded with them; they contain the Psorosperms.

Professor Baranski, of the Vienna Veterinary School, who has published an excellent paper on the subject in a recent number of the *Oesterreichische Vierteljahresschrift für Wissenschaftl. Veterinärkunde,* readily produced the disease in rabbits by feeding them with liver containing these nodules. He also produced Psorospermosis in frogs in the same manner, and with a view to study the phases in development of the entozoön. We propose referring to Baranski's researches at an early opportunity.

In the meantime, the etiology of the malady may be noticed. This is not yet quite clear, but there can be no doubt that damp, and particularly unsanitary conditions have much to do with its production and maintenance. A few weeks suffice for the abun-

dant development of the organism and the destruction of the animal it infests. The Psorosperms evidently find access by means of the food and water consumed, and they soon distribute themselves over the body. According to Paulicki's observations (*Beiträge zur Vergleichenden Pathol. Anatomie*), they even find their way through the placental circulation to the embryo in viviparous animals, as they have been found in the lungs and intestines of dead-born creatures. In the fœtus of a monkey (*Macacus cynomolgus*) they were discovered in these parts.

When situated in the intestines, the fæces are a fruitful source of dissemination of the entozoön; so that one infected animal introduced amongst healthy ones may contaminate the whole. Old animals, as in so many disorders of this class, are less readily infected than young ones. Individual predisposition, brought about by hygienic conditions, counts for something in readiness of infection; and a general insanitary state may lead to epizoöties of a widespread and destructive kind. When the disease has appeared in a poultry house or yard, the knowledge we now possess as to its cause and mode of extension furnishes the indications for its suppression. Cleansing in the most thorough manner is the chief measure; this applies more especially to the ground or floor and the water-troughs. Every Psorosperm should be destroyed. Diseased or suspected fowls should be killed, and burned or buried in quicklime; while those with which they have cohabited should be isolated, fatted, and killed. New fowls should not be introduced until every source of contamination has been removed.

Rabbits appear to be extremely liable to Psorospermosis; therefore fowls should not be allowed near them until their freedom from the entozoa has been ascertained. Other animals are also bearers of these pests.

The subject is a new and a very important one to English veterinarians; hence the reason for referring to it at such length in reply to our correspondent's inquiry.

The disease is not to be confounded with what we have described in "Veterinary Sanitary Science and Police" as Fowl Cholera. In that work, in the section on Trichinosis, will be found a drawing of the muscle Psorosperm.]

# RHEUMATOID ARTHRITIS IN THE HORSE.

BY ROBERT WARD, F.R.C.V.S., LONDON.

THE following somewhat interesting case came under my charge on the 5th of June last—it is, by the way, the case referred to by me as one I should have recommended to be sent to the R.V.C., did I not fear the *result* likely to obtain through the two-guinea subscription system thereat.

On the morning of the 5th, I was requested to visit two cart-horses belonging to a London firm, which had been hard at work with others, drawing heavy goods to and about the Kilburn Show ground. Neither cared to feed, seemed to be chilled; "one was lame all over, and all of a heap," the horsekeeper informed me.

On arrival I found one, a bay horse, affected with congestion of the lungs; and the other, a fine English-bred cart-horse, nine years old, standing in the state as the horsekeeper remarked, "all of a heap," bathed in profuse perspiration, breathing quickly, and with a dull, listless appearance; pulse 80, wiry, intermittent and jerky in character; mouth hot and clammy; ears cold and damp; conjunctivæ slightly injected; the thermometer registered 103°. When I entered, the patient was trying to stale, but only a small quantity passed, of a thick, light-brown nature; not being prepared with a vessel, I was unable to catch any for test. The fetlock joints all round were swollen, hot, and tender, so that it was with great effort we made our patient turn in the stall. We managed in time to remove him to a loose box, and having explained the case as one of Rheumatic Fever, which doubtless would determine to the joints, and terminate in a case of Rheumatoid Arthritis pure and simple, the cause of the affection was so clear that I was at once followed; for these horses had been for days working up to their hocks and elbows in wet clay, and frequently standing a long time therein whilst the goods were being unloaded. Having given orders about diet, gruel, etc., together with careful drying of the surface of the body, and rugging, I prescribed Mist. oleaginous co. with Ol. tigli. ♏x., to be given instanter, and to be followed by Mist. Aconiti saline co., containing ♏v. of Fleming's Tinct., to be repeated every three or four hours, and the extremities bandaged.

The next morning (6th) I found my patient a little more com-

posed, but quite unable to move; his pulse was 70, wiry and jerky; heat 102°; his joints tender, and the knees beginning to swell and become as painful as the fetlocks. Prescribed Linit. aconiti c. Camphora co. to the joints, and dry bandages—the liniment also to be applied to the loins; and as the bowels had not responded, I repeated the Mist. ol. co. c. Ol. tigli. as before; repeat Mist. aconiti co. every four hours.

Visit on the 7th.—I found patient much the same, joints more swollen, especially the knees: ordered light hand-rubbing again and Linit. aconiti co. The pulse was 70, heat 102°, bowels not acting, and the animal had passed but little water, which was dark and of a thick consistence. I ordered enematas to be thrown up every three hours, gruel to be exhibited if animal would not drink it, and left a dozen powders of Pot. chloras. to be given in it. Extremities to be attended to as before.

8th.—Visit. Patient much the same; bowels acted slightly, very offensive; urine scanty and frequent; does not feed. Pulse 70, wiry, less jerky or catching; breathing easier; heat 101°; joints painful and much swollen, the hock joints are now swelling—continue treatment to them. Repeat Ol. mist. co. c. Ol. tigli. ♏x., and Mist. aconiti co. every six hours; repeat Pulvis. pot. chloras., and twice a day exhibit enemata simplex.

10th.—Visit. Patient appears easier, and moves about a little by himself; bowels have acted, but not freely; urine still scanty, and efforts frequent. Prescribed Tinct. hyoscami, Liq. potassæ in mucilaginous Mist., with Hydr. subchlor. ʒs on the tongue; loins to be rubbed well with Lint. aconiti co.

11th.—Repeat treatment.

12th.—Visit. Patient much easier, pulse 62, heat 100.2°; repeat treatment to extremities, and give Tinct. hyoscami et Liq. potassæ mist. at night, repeating Mist. aconiti in the morning of 13th if demanded.

Fæces fairly moist; urine still slight, but better. From this date to the 19th the treatment was much the same, and the case making progress in the most satisfactory manner. Now and then the bowels were treated to an enemao simplex and Mist. ol. co.

On the 19th the patient appeared to have taken a turn, and

was mending; his appetite had returned somewhat, his urine was better, his pulse 50, heat 100°, breathing easy, and his joints getting reduced in size. Prescribed tonics, slight walking exercise, hand-rubbing, etc.

The patient continued to mend apace, and on the 27th case was marked off "*doing well.*"

On the 8th July telegram came soliciting immediate attention. On arriving at the stables and entering the box I found my patient in greater pain than ever, both his stifle joints had become enormously swollen, hot, and intensely painful; ordered the Linit. aconiti co. to be well applied, Mist. aconiti co. exhibited in the ℥v. doses every three hours till easy. The pulse was again 70, the heat 102°, breathing hurried.

9th, 10th, and 11th.—Patient was treated much the same, an oleaginous mixture being given once.

On the 12th the off stifle appeared much reduced, but the near larger than ever, so we applied a blister to each stifle joint, the near being most carefully attended to.

On the 16th I found the swelling had become soft anteriorly in the near stifle joint; just below it I found a suitable place to open the sac and allow exit to the imprisoned fluid; and making an opening, an escape of quite a gallon of serous-looking fluid, most offensive in smell, followed, which appeared to give the patient immense relief. I ordered the part to be well fomented and to be well dressed with carbolic liniment. Left.

19th.—I inserted a seton through the swelling, and in doing so an enormous quantity of pus, *most offensive*, escaped. Prescribed Ml. and Veg. tonics.

From this date to the 29th the seton was daily dressed and frequently renewed, the discharge being enormous as well as fœtid. The seton was removed and the part was well syringed, with warm water first, then with carbolic lotion, and this was repeated twice a day until August 9th, when the near stifle was again blistered; the off, by the way, had gradually subsided and was now quite reduced. The carbolic lotion was changed for one of Zn. Cl., and this was used daily up to the 20th, when, as the discharge still continued, a strong injection of carbolic lotion was used; but still the same copious discharge, though not so fœtid,

and as the owners had become anxious, it was determined to try more severe measures to set up healthy action. So, on the 25th, I injected Tinct. iodi. co. ʒj.

On the 29th I saw the case again, and found the discharge somewhat suppressed and healthier, and repeated the injection, using some ʒijs., and dressed the part well around the outside. My friend, Mr. Banham, was present at the time, and was rather astonished at my treatment as a *dernier resort.* However, on September 5th, the discharge ceased entirely, the wounds healed, and on the 13th I discharged the patient. He was nursed a few weeks and gently exercised, then resumed work, which he has continued up to this present, March 6th, in better health than ever. I might mention that during the latter part of the time I exhibited doses of the iodide of potash with Hyoscami mist.

*Remarks.*—The history of this case led us at once to find a cause for such severe symptoms ; but it has occurred to me since, that this animal's blood was in a pyohæmic condition long prior to the rheumatic attack, the result of exposure on the wet, clayey soil of Kilburn Show grounds ; and that this attack became a factor, if I may use the term, for the development of the true condition of the blood, for this animal never had done so well as he should, and now, after the attack, mends apace. The great difficulty was to set up healthy action in the abscess formed in the stifle, and however severe the injection of the Tinct. iodi co. may be, I must say I have been most fortunate with my cases so treated, and have been surprised how speedily the healthy, healing process develops afterwards. The kidneys did not, during the period of the rheumatic symptoms, appear to be structurally affected, although the carter said the animal had not staled so freely. This I took as evidence of premonitory symptoms of the affection, which it is always ushered in with.

## THE ŒSTRUS OVIS.

BY CHARLES WHITWORTH, F.R.C.V.S., LONDON.

THE "Œstrus Ovis," or "gad-fly" of the sheep, assumes its perfect winged form at some uncertain period from May to July. Its almost sole object is now the multiplication of its kind, from which it is diverted by no other propensity. And this important duty being performed, the end of its existence has been achieved, and it expires.

If one or more of these Œstri appear, the whole flock are much excited; and if one is attacked, it will bound away from the rest of the flock, across the field, looking fearful behind it at every stride. The Œstrus, impelled by instinct, endeavours to deposit its eggs on the inner margin of the nose, where the necessary conditions exist for the development of the larvæ, which crawl into the maxillary sinuses; and when full grown they fall from the nostril and change into the pupa state. The fly bursts the shell of pupa, say, in about two months.

On referring to my case-book, I find that in April, 1871, at the request of W. Moore, Esq., of Burton, Lincolnshire, I examined a flock of hogs, which were suffering from an attack of Œstrus Ovis. This is about the period these larvæ have attained their full growth and seek to escape. Consequently they are restless in their habitation, and the sheep suffer considerable annoyance, which they manifest by stamping and snorting, together with the following symptoms.

*Symptoms.*—Pyrexia, marasmus, anorexia, sneezing; nasal discharge (from both nares), profuse and muco-purulent, assuming a greenish hue, and tenaciously adhering to upper lips; shaking of head and rubbing nose on grass; lips œdematous; rumination suspended; wool leaves the skin on the slightest touch; on closely examining "hogs" you discover larvæ about nares, agglutinated by mucus, and lying on the ground. The most anæmic sheep segregate themselves and die.

*Treatment.*—The hogs were removed to the best grass land on the farm, and run thin—*i.e.*, allowed to range and change; and they had given them nitrogenous food and chloride of sodium *ad lib.;* afterwards reconstructive tonics. Nearly all recovered.

# Editorial.

## GLANDERS IN LONDON.

At the risk of being considered tiresome, we again call attention to the prevalence of Glanders in London, and the absence of efficient inspection to extinguish this dangerous and destructive disease. As will be seen by our parliamentary report, no fewer than 116 horses were destroyed in Kensington parish alone in the space of six months, and even that large number may be far inferior to the real one. From all we hear, we have every reason to believe that the number of cases of Farcy and Glanders reported to the Veterinary Department of the Privy Council, does not give anything like an idea of the prevalence of the scourge, which, instead of being represented by tens, might more correctly be shown by hundreds. Many veterinary surgeons in London could tell a startling tale as to the extent to which Glanders prevails, and the manner in which its existence is ignored; but as they have no interest in making themselves officious; and as the authorities appear to be quite satisfied with the present measures in regard to its suppression, as well as with the control of knackeries, we suppose the disorder will remain as rampant as heretofore. We certainly cannot discover any greater activity in detecting cases on the part of the local authorities. We trust some active member will take the question up in our new parliament. There is ample material for a good case on behalf of horse-owners and the general public.

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## "SHEEP-ROT" *(CACHEXIA ICTERICO VERMINOSA).*

BY PROFESSOR FRIEDBERGER, MUNICH VETERINARY SCHOOL.

(*Continued from p.* 188.)

Sheep No. 3 (Wether).

*Status præsens* on the morning of the 31st January. Emaciation; visible mucous membranes and skin pale, but not the slightest trace of yellow colour. Wool dry, faded, and easily pulled out. External temperature varied in different parts (ears hot, extremities cold). Heart's beat felt with difficulty; pulse 120, and irregular; internal temperature 39·8° C.; respirations somewhat difficult, abdominal, and variable in number, being, when in complete quietude, from 24 to 30. Nose damp and cold; no cough; auscultation gave increased vesicular murmur. Mouth covered with slimy matter. Abdomen tucked up. No pain was exhibited upon pressure being applied to the right side in the region of the liver. Peristaltic action of rumen present, but sluggish. Fed tolerably well, but rumination had not been noticed. Fæces normal in colour, form, and consistence (now and then a parasite could be found). Urine dark yellow, clear, alkaline, and effervesced when an acid was added; contained chlorides, but was free from biliary colouring matter. The animal stands lazily; weak, with head depressed, and showed little resistence when handled, but when pressed upon the back it shrank and cringed.

In the evening the temperature was 40·2° C.; pulse 110; resp. 20. The animal was watched for some time with the following results :—*

| Time of Observation. | Pulse. | Temp. | Resp. | Observations. |
|---|---|---|---|---|
| Feb. 1. morning | 120 | 40·5C. | 18-20 | Ruminates but seldom, and only for short periods at a time. |
| evening | 104 | 40·3 | 20 | |
| ,, 2. morning | 92-96 | 40·8 | 20-24 | Urine alkaline, but effervesces no longer. |
| evening | 96 | 40·5 | 28 | |
| ,, 3. morning | 96-100 | 40·7 | 28-30 | Bodily temperature more evenly distributed. Feeds well and ruminates better. |
| evening | 104 | 40·5 | 26 | |
| ,, 4. morning | 92 | 39·7 | 24 | Urine slightly effervescive. Resistence greater. |
| evening | 92-96 | 40·5 | 28 | |
| ,, 5. morning | 100-104 | 40·3 | 28-30 | |
| evening | 96-100 | 40·2 | 28 | |
| ,, 6. morning | 92 | 40·8 | 30 | Systole more readily felt. |
| evening | 96 | 41·3 | 28-30 | Temp. of extremities changeable. Rumination frequent. |
| ,, 7. morning | 92 | 40·1 | 28 | |
| evening | 102 | 40·5 | 28 | |
| ,, 8. morning | 100 | 41·1 | 30 | |
| evening | 88-92 | 40·7 | 32 | |
| ,, 9. morning | 96-100 | 40·6 | 24 | Urine alkaline, but does not effervesce upon the addition of acids. |
| ,, 10. morning | 88 | 40·7 | 24 | Animal frequently sneezes, and there is a serous discharge from both nostrils. |
| ,, 11. morning | 106 | 40·6 | 30 | |
| ,, 12. morning | 88 | 40·3 | 24 | |
| ,, 13. morning | 88 | 39·8 | 32 | |
| evening | 92 | 40·2 | 28 | |
| ,, 14. morning | 92 | 39·6 | 28 | |
| evening | 88 | 40·8 | 30 | |
| ,, 15. morning | 88 | 39·9 | 24 | |
| evening | 92 | 39·6 | 24 | |
| ,, 16. morning | 84 | 40·1 | 28 | |
| ,, 17. morning | 106 | 39·3 | 32 | Appetite not so good. |
| ,, 18. morning | 96 | 40·4 | 28 | |
| ,, 19. morning | 98 | 39·8 | 24 | |
| evening | 104 | 40·2 | 24 | |
| ,, 20. morning | 104 | 40·1 | 24 | |
| ,, 21. morning | 84 | 40·2 | 28 | Appetite and rumination good. Urine alkaline, and effervesces upon the addition of an acid. |
| ,, 22. morning | 92 | 40·0 | 24 | |
| ,, 23. morning | 96 | 39·8 | 28 | |

Although the animal possessed a fair appetite during this time, yet it gradually wasted; but no signs of œdema, diarrhœa, or icterous pheno-

* The temperatures, etc., were taken before eight o'clock in the morning, and before four or after five in the evening.

mena were present, nor was there any increased sensibility in the region of the liver. The general appearance and movements were decidedly better than when the observations began.

*The animal was bled to death on February 23rd, and the autopsy was carried out directly under the supervision of Prof. Dr. Bollinger, with the following results:*—Body emaciated; a slight serous exudate flowed from both nostrils. About a quarter of a pint of serous fluid was found in the thoracic cavity; pleuræ smooth and glistening. The lungs were swollen; in the supero-posterior part there was a sub-pleural nodule about the size of a hazel-nut; on the posterior part of right lobe there were two firm greyish-opaque, splenified places about the size of almonds, and on the medial (internal) surface a few hæmorrhagic patches about 2-6 mm. in diameter. The lungs crepitated when cut, and solitary grey nodular patches were detected upon the cut surface, as well as hæmorrhagic spots resembling those under the pleura, but no erratic flukes could be detected microscopically. The mucous membranes of the medium and small-sized bronchiæ were covered with a frothy and somewhat tenacious matter, but no filariæ were to be seen.

In the heart some sub-endocardial petechiæ were present. Abdominal cavity contained about a pint of yellow serous fluid. Right lobe of liver enlarged, and had an obtuse border; left lobe atrophied. Lymphatic glands enlarged to about the size of walnuts, greyish in colour, and tolerably firm; capsule of left lobe discoloured, greyish-yellow, cloudy, and possessed numerous coarse granular contractions. On the surface of the left side of liver there were numerous flat, elevated, uneven protuberances of connective tissue, also contractions, and several small sub-capsular, irregular-shaped hæmorrhagic spots, about ½-1 cm. long by 1-2 mm. broad, in which occasionally flukes 10 mm. long were found with the head protruding into the hæmorrhage, whilst the remainder of the body usually had to be drawn out of the hepatic duct.

When the liver was cut in the vicinity of the large ducts, it was firm, and even grated in the left lobe. In the latter (left) the connective tissue-thickening was most developed, giving it the appearance of cirrhosis; this was not seen in any other part. The other parts of the cut surface presented a granular appearance of a pale-grey colour, anæmic, and the lobules sharply defined. In some places small cavities containing a sanguineous matter were to be seen, about the size of hemp-seeds. Numerous parasites were taken from the bile-ducts, embedded in a thin, dirty, brownish-green matter. The ducts of the left lobe were completely plugged by the *Distoma hepaticum*, most of which were from 14-22 mm. long, and laid with their heads towards the hilus. Some of the larger ducts were enlarged and contained ten or more parasites collected into one cluster; the walls of these ducts were thickened, the mucous lining swollen and inflamed (catarrh). The portal vein contained recent blood-clots; the gall-bladder was moderately well filled with a dirty, brownish-green, tenacious bile, and contained a number of sexually-mature *Distomata*, and many ova. Nothing of importance was seen in the remaining abdominal viscera, except two examples of *Cysticercus tenuicollis*.

I will now endeavour to point out the more important features of the results of these examinations, and it will be advantageous if I first allude to the time of invasion of the entozoa. Gerlach says it generally occurs from July to September—*i.e.*, towards the end of summer. According to Johanni, meadows are dangerous from the end of summer to the commencement of frosts. The incubative period (*i.e.*, the elapse of time between the reception of the young flukes and the advent of disease) in young animals is, according to Zürn, from one to one-and-a-half months. Gerlach says it may possibly be six weeks, but may also extend to three months or longer.

Leuckart considers that the fluke, whilst wandering in the liver, rarely measures more than 1 mm., and requires about three weeks to become fully developed and sexually mature, as it is found in the biliary ducts.

Gerlach has divided the course of "Rot" (*Cachexia icterico verminosa*) into four stages :—

1st. *Inflammation of the Liver* (*Traumatic*) *or Hepatic Inflammatory Swelling;* and he thus describes it :—Liver hyperæmic, swollen, soft, surface smooth, having small apertures out of which a sanguineous fluid may be pressed, and around which Peritonitis is frequently seen. Small hæmorrhagic spots in the parenchyma. Parasites of various sizes, rarely mature. Bile more or less mixed with blood. Rarely any serous exudate into the abdominal cavity. This stage generally occurs between July and autumn, and is not easily (if ever) diagnosed during life, but is sometimes detected after death from Apoplexy.

2nd. *The Dropsical Stage* occurs in about six or twelve weeks—viz., from September to November, and even as late as December. Emaciation and weakness are not yet very apparent if the animal is well fed. Death seldom occurs. Liver is pale, firm, and not yet atrophied. Flukes are fully developed.

3rd. *Emaciation Stage*. This is the stage at which the disease has reached its maximum, and causes the greatest mortality. The liver becomes atrophied in various degrees ; sometimes total disappearance of one or other of the lobes, and sometimes there is serous effusion into the cavities of the body. This stage generally occurs about three months after the reception of the parasite germs (January or February).

4th. *Migration of the Flukes.* This generally takes place from May to July.

When we consider the circumstance that many animals were known to be ill, and many had died, long before the above three animals were sent to the school, we may conclude that the invasions must have taken place at different times in the various animals. This, of course, was possible, and would quite correspond with Gerlach's views of the matter.

The striking dissimilarity in the development of the *Distoma* (even in the ducts) in our two first cases—some being only 3 to 4 mm. long, whilst others were sexually mature—may be accounted for *by repeated invasions in the same animal at different times.*

The principal results of the necroscopical examinations on January 31st and February 3rd (the disease being in what Gerlach calls the first stage), were that many of the parasites were very small, and therefore we may assume *that these animals must have been invaded unusually late.*

It cannot be doubted that the young flukes were derived from the meadow, especially as it offered every facility for the development of the *Cercariæ;* and, moreover, another flock which was turned into the pasture subsequently became affected.

From the examination of the two sheep, and our experience that young sheep give evidence of disease quicker than old ones, together with the fact that they were exposed to the invasion late, it is interesting to know that these animals, although first brought into the meadow as late as December 14th, yet became diseased. And it should not be forgotten that in the same year we had 4° to 6° of cold between the 15th and 20th of September—removing, one would think, all possible chance of invasion ; but we see from the above cases it was not so, and the frosts seemed to cause no injury to the life or development of the flukes.

With regard to the influence which breed and age has in resisting infection, it is a well-known fact that young, constitutionally weak, and ill-nourished animals, especially fine-wooled merinos, if placed under the same conditions,

suffer more than stronger, older, more robust, and well-fed animals of commoner breeds. Therefore, we need not be surprised that such animals show marked and intense signs of disease during life, although, relatively, few parasites are found in them after death.*

The intensity and danger of "Rot" depends upon the kind of parasite which invades the animal. The *Distoma hepaticum* is decidedly more dangerous than the *Distoma lanceolatum*, and Leuckart says this is due to the small, sharp, horny spikes which cover the body of the former, causing permanent injury to the parts with which they come in contact.

Few persons seemed to know of any deadly outbreaks of "Rot" caused exclusively by *D. lanceolatum*, except Leuckart, and it was believed that it did not abound in such large quantities as the *D. hepaticum*.

The three cases above described were exclusively due to *Dist. (Fasciola) hepaticum*, and this was undoubtedly the cause of the intensity of the outbreak.

Various opinions have been given by different authors with regard to the frequency with which the two species of Distoma are relatively met with. Gerlach found the *D. hepaticum* to predominate. Roloff, in one case, discovered hundreds of *D. lanceolatum*, and only a few specimens of *D. hepaticum*. Zurn found the *D. lanceolatum* almost exclusively in Thuringia ; Feser and I found only *D. lanceolatum* in a flock of merinos in 1874 and 1876. In this flock they were present in such large quantities, that it appeared as if the greatly altered and sclerosed-looking liver, as well as the extremely enlarged and thickened bile-ducts from which the parasites could be scraped out in large quantities, was due to them ; and yet notwithstanding all this, and the general disturbance which accompanied their presence, it was not clearly proved that they were wholly to blame. In these cases, as in those above described, we had completely developed examples of the parasite in December, as well as chronic alterations in the liver.

The symptoms alone, during life, can never be relied upon to fix a correct diagnosis. There is nothing characteristic in an animal having disturbances in the nutritive functions, paleness of the visible mucous membranes, diminished appetite and rumination, hydræmia, or the wool being easily separated from the body, etc. The temperature of the body is very changeable, quickly rising to a high degree, or falling again just as fast ; but it must not be forgotten that only one-year-old sheep naturally have a high temperature. Siedamgrotzky found wethers from six to twelve months old to be about 40·2° C., and out of 284 measurements it was in ten cases about 41·4° C. If we had only had a proper rule by which to judge the results of the three sheep's temperatures—such as taking the temperatures of completely healthy animals from the same flock, but this was not possible—I believe we should have found our animals to have, at least at times, a fever temperature, especially Sheep No. 2. This was the only animal in which we detected acid urine. Other symptoms which are said by some authors to exist in the disease, were absent in our cases. For instance, there was no appearance of icterus (Gerlach could never detect this either), nor were there any indications of pain upon pressure in the region of the liver ; neither was any enlargement present. The fæces were normal in form and consistence in all

* According to the report of my colleague (Herrn Bezirksthierarzt Gasteiger, of Erding), all the animals on a certain farm occupied one field, and few cases of "Rot" occurred in the ewes, whilst in the young sheep exceptions were rare. On another farm close by, a number of two-year-old sheep were removed from a water-meadow and placed in this field from October 11th to 19th (*i.e.*, after the frost), and numbers of them became diseased, whilst a ram which was left in the water-meadow remained quite healthy.

the animals, *Distomata* being seldom found in those of Sheep 1 and 2, but frequently in No. 3. The excessive serous exudation into the abdominal cavity of Sheep No. 1 must have had considerable influence on the general progress of the malady, as was noticed by increase of pulse and respirations, and must always be looked upon as a grave complication, and might even cause death, or at least considerably hasten its approach.

The changes in the structure of the liver (caused by the parasites) were of recent date, excepting in Sheep No. 3, in which there was hyperplasia and contraction of the connective tissue; and most of the parasites had reached sexual maturity—phenomena which go to show that the disease had existed for some time. The left lobe of the liver was the part most affected in all three sheep, and nothing was discovered in the *post-mortem* examination which was not known before.

The small pin-head or millet seed-like openings found on the surface have been described by Will and Dietrichs, and the projection of small or large flukes from the surface by May. The hæmorrhagic spots have been noticed by Gerlach. Flukes under the serosa and in the enlarged hepatic ducts, causing destruction or degeneration of the hepatic parenchyma into a pulpy matter surrounding the parasites, have also been described by May.

The opinions as to the manner in which the *Distomata* find their way into the livers are various. Leuckart, Zürn, and others say that the encysted germ finds its way into the stomach, where the gastric juice dissolves the capsule and sets the embryo free to travel along the duodenum to the mouth of the hepatic duct, to which it gains access, and by this penetrates to the liver, where Schäffer fancied the bile might assist its passage in some way; while others, such as Gerlach, May, Will, Dietrich, Spinola, believe that the embryo, after being freed from its capsule by the gastric fluid, pierces the walls of the stomach or small intestine, the peritoneum and capsule of liver, and so obtains an entrance to the parenchyma, and from it to the hepatic ducts. What supports this idea is the fact that May found the smallest and youngest parasites under the peritoneal covering of the liver.

When we look at the results of the *post-mortem* examination of the three cases above described, we do not find anything to support the last view. On the contrary, we cannot consider the Peritonitis (Peri-hepatitis) which was present, to be the effect of the migration of the parasites from without, but, conversely, of their centrifugal migrations from within. In favour of these statements, I consider the breaking up of the parenchymatous tissue forces the parasites towards the serosa; for as this parenchyma is destroyed, so they travel on, until we find them making the fine perforations on the surface of the organ.

Moreover, the relatively large openings in the capsule of the liver, the fresh coagulations of blood which were found mixed with the exudations, and the fact that the heads of the parasites were always found to be the projecting part from the surface of the liver, as well as our often finding fully developed *Distomata* in the abdominal cavity, all go to support this view.

If we accept the theory that the parasites gain access from the duodenum to the liver by means of the hepatic duct, we are compelled to consider the presence of the *Distomata* in the portal vein and in the degenerated hepatic tissue (which often assumes the appearance of distinctly formed cavernous spaces), as a peculiar diversion or straying from the ducts. We must first remember that the young flukes gain admission by the *Ductus choledochus* into the fine ducts, some of them—and evidently not a few—piercing the walls of the ducts while they are yet but slightly developed.

Leuckart has already propounded this view; for he says that the head-hooklets of the young *Distoma hepaticum* form a very good boring apparatus.

The following summary is given :—

1. The *Distomata* may remain in the bile ducts, undergo their normal development, and there become sexually mature, etc.

2. Some pierce the walls of the ducts, and gain access to the parenchyma of the liver, causing degeneration and even mortification. They may also even perforate the capsule, and gain admission to the abdominal cavity, giving rise to Peri-hepatitis or Peritonitis.

3. By destruction of the hepatic tissue, some others may get into the portal veins, and cause embolism, inflammatory irritation of the intima and thrombus.

4. Finally, others may pass into the hepatic veins and then (*a*) travel centrifugally into the right side of the heart, and from there to the lungs, producing hæmorrhagic centres, or cause the air passages to become filled with blood. After a time we find nodules, probably due, as Rivolta first described, on the first onset to encysted flukes. From an oral communication from Bollinger, we learn that he found in three lungs which he examined long after death (the livers of these animals from which the lungs were taken showed the usual parasitic changes), hæmorrhagic masses containing young flukes, and it is evident they must have been deposited there from the liver by the embolic process, through the hepatic veins, right heart, and pulmonary artery.

(*b*) Leuckart believed that the *Distoma* could gain access to the most distant parts of the body by means of both venæ cavæ, and cause abscesses in such parts.*

It must remain undecided whether another explanation would be more satisfactory than the last. If we cannot receive the supposition that the *Distomata* pass by the right heart into the lungs, and from there to the left heart by the capillaries—which, by-the-by, are evidently too small to allow them to pass in any form—we must turn our thoughts into another groove; and when we consider the structure of the parasite, it will not be unreasonable to conceive its piercing the walls of the vessel and wandering. This notion is supported by the fact, that we find the parasites under the pleura, etc., they might find their way into the pulmonary veins, and then (perhaps passively by the blood current) pass to the left side of the heart, and from there travel to the peripheral branches of the arterial system. The so-called "fluke-abscesses" have, as yet, never been detected in domestic animals; still it is quite possible that they have been overlooked. The Apoplexy described by Gerlach in the first stages of the disease, at least furnish us with the idea that is possible, and that such may be due to the migration of these embyros.

If we accept the idea of invasion taking place by means of the *Ductus hepaticus*, we cannot so clearly account for the peculiar wanderings and dis-

* Such peripheral abscesses have up to the present, however, only been observed in the human subject. Leuckart, when speaking of the migration of the parasite, says that flukes were found in the vessels by old authors. Duval found a young *Distoma hepaticum* in the portal vein, and four or five others in its branches. He supposed they wandered from the ducts, although no other traces of parasites were found in the liver, and they could only effect their passage after the head-hooklets had become developed. According to Leuckart, flukes can gain access to the hepatic veins, and from there travel by both venæ cavæ to the most distant parts, and then cause abscesses; and he endeavours to explain cases where flukes have been found in peripheral abscesses—such as in the planti pedis (Giesker), on the occiput (Harris), on the posterior part of the ear (Fox), in the right *Regio hypochondriaca* (Dionis). In all of these cases the parasite was observed to be young and imperfectly developed; the explanation of which Leuckart believes is, that the fluke does not come to perfection external to the liver. Davaine's idea that the entozoon lives in the vessels from the commencement to the end of its career, the author doubts.

tribution of the young flukes in the liver; for we know it is only in the ducts that the parasite attains its sexual maturity. On the other hand, it cannot be denied that they are capable of piercing and passing through the wall of the duct, for we have ourselves often seen the heads of tolerably well-developed specimens just piercing the wall, whilst the rest of the body was free. It would be quite another matter if they gained access as the Echinococcus embryo is said to do (Heller), by means of the veins of the intestines, mesentery, and portal vein; if this was the case, we should expect to find at least the evidence of their passage, and their more general distribution.

Finally, as regards the expulsion of the parasites, Gerlach says he has never found them in the gall-bladder during the winter; but according to him they leave the host from May to July. Those sheep which were examined in December, 1874-6, contained a large number of parasites in the bladder, and even in the duodenum; and in Sheep No. 3 of our own which died on February 3rd, several sexually mature parasities were found in the gall-bladder. Pech (*Thierarzt*, 1873, p. 87) also observed the parasites leave the liver in autumn and winter, and concluded that it was not necessary that they should remain in the liver for three-quarters of a year, but that they can leave earlier, perhaps after their sexual function is completed; or they may remain longer than eight months. So it is possible that those which he found in the autumn might have entered the body the previous autumn.

From our experience with the ten-months-old sheep (No. 3), it would appear to support Pech's first view.

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## HORSE-POX IN MONTREAL.

We learn that towards the end of February last there was a very remarkable outbreak of Equine Variola in Montreal, as many as fifty cases being reported to Professor McEachran in one day. As usual, the eruption was mainly confined to the mouth, heels, and inside the thighs, about ninety per cent. having the heels chiefly affected. In many cases the eruption was confluent, and the resulting sores extensive and troublesome. One veterinary student and six grooms had become inoculated through scratches or wounds on the hands, well-defined pustules resulting. We would suggest that vaccination be attempted with those persons who have been accidentally inoculated in this way.

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## ABORTION IN COWS.

BY PROFESSOR STOCKFLETH, COPENHAGEN VETERINARY SCHOOL.

(*Continued from page* 195.)

The cause which predisposes such a cow to abort the next time she becomes pregnant, is partly due to the changes the uterus has undergone, from the decomposition of the fœtal membranes when she last aborted, producing an indisposition to accommodate itself (by extension) to the growth of the fœtus; it is also possible that the animal still lives under the same stimulating circumstances as before. That the exciting cause can be associated with the locality, is proved by the fact that freshly-purchased cows abort when they are placed in stables in which abortion has previously occurred; and strange animals are more predisposed to this influence than those already kept in the stable—especially so if they are pregnant for the first time, the rule being, if a cow aborts once, she will generally do so a second time.

The reason why farmers' cows are more subject to abortion than the peasants, is partly due to using near-related or unsuitable—too young and weak—bulls, but the bull cannot in all cases be blamed. It is a commonly acknowledged fact, that cows which are put to old bulls are very likely to abort; and I am acquainted with a gentleman who was formerly very partial to using large, aged bulls, but has recently altered his opinion, because he had so many cows abort. Some breeds, as shorthorns, when crossed with others, are supposed—and not without foundation—to cause abortion. A landowner put thirty of his cows to a prize shorthorn bull (Yorkshire breed), and twenty of them aborted; similar cases have been reported to me from various sources. Kretzschmar's* observations upon this point are very interesting. He says that on one farm a large number of peculiar cases of abortion occurred, the bull (which was the offspring of a cow which had aborted several times, and nearly every time retained the fœtal membranes) seemed to inherit the peculiarity in some way, for nearly all the cows which were put to him aborted and retained the fœtal membranes; therefore the bull was rejected as useless, and no more cases of abortion were seen. In these cases the young were healthy, but the membranes were diseased. It is a general opinion that the death of the embryo is due to disturbance of nutrition on the mother's side; but it appears from various observations that the fœtus itself may become diseased, and produce its own premature expulsion. For instance, Sempastour found volvulus of the intestine in a fœtus which had been aborted from a mare; in another he found Enteritis present; in a third he perceived the small intestines and cæcum filled with Ascarides. Therefore it is evident that we must give due consideration to such cases. The emaciated condition in which the young creature is usually found, gives one the idea that it died from deficient nutrition, but this is not always due to disease of the embryo itself.

The death of a fœtus does not make it absolutely necessary that the mother should abort, and as a rule the fœtus is expelled later on; so that when it is born it is generally decomposed, or birth may not take place at all. When cows, on account of their barrenness, are fattened and killed, we often find a dry, mummified-like fœtus (Steinkalb) in the uterus, although it is true these are rare cases.

In the foregoing we have mainly confined our remarks to the causes of abortion which relate to the cow herself. We will now consider what may be called the external causes, or those relating to management, etc., under which milch cows live; and I think you will see that we shall be able to throw further light upon its origin.

It has already been mentioned that cows may abort whilst grazing in open fields, and that it generally commences to take place while they are being driven to the pasture; and this predisposition not only lasts while they are grazing, but also continues after the animals are again brought back to their sheds for the winter.

It is a fact that cows when first turned into grass partake of it greedily, very often producing Tympanitis, which may cause pressure upon the diaphragm; hence less space for lung-action, the consequence of which is carbonition of the blood, which must be, and undoubtedly is, dangerous to the life of the fœtus. When abortion takes place in autumn it is generally due to the cold, raw weather and innutritious grasses; when the grasses are abundant, we must look upon abortion as being the result of the animals being exposed to the wet and damp ground upon which they have to lie in autumn weather.

We know from experience that mares often abort from being exposed to unfavourable weather and insufficient nutrition. During the Franco-Prussian

* Bericht über das Veterinarwesen im Königreich Sachsen für das Jahr 1876.

war, in 1870-71, a regiment was placed on the Belgian frontier, for which purpose a large quantity of remounts were bought, amongst which were many pregnant mares, although their condition was not detectable when purchased. Their work was very laborious, the weather bad, and the food insufficient and not of the best quality ; the consequence was, that eighteen mares "slipped foal" after they had been in quarters for a fortnight, where they were to receive care and attention. The young were very emaciated, the flesh pale and flabby, and the blood thin.*

In Germany we have had the same experience. Staff-V.S. Friis reports that several of the mares which retreated with the wagons from the Danish army in 1864, aborted from the cold and hunger they had to endure.

Abortion in autumn is due, no doubt, to the innutritious food causing a watery condition of the blood (Hydræmia) and badly nourished tissues ; and when it occurs later on, after the animals have been removed to their sheds, it is unquestionably due to the sudden change from a poor to a rich and stimulating regimen, for the milk secretion is suddenly increased or congestion of the uterus follows ; during such disturbances in the circulation abortion may take place.

When abortion occurs as an epizoöty, it generally arises from some widespread unfavourable influence, as, for instance, wet seasons producing bad harvests, by which the food is damaged by being soaked with rain, and afterwards turning mouldy or decomposed. Continual rain, etc., washes out all the bitter and aromatic principles, as well as the sugar and soluble salts, so that the food loses its nourishing qualities. Mould and decomposition destroy the albuminous matter, and the food is not only depreciated in its nourishing properties, but is even poisonous. In both cases we see that stall-feeding may continue the non-nutritive feeding which began with the autumn grasses. When food is mouldy and decomposed, and has a bad odour, which is generally the case in damp, mild winters, it causes abortion from want of nutritive properties. Dry-mould is not so bad as the moist, in its action upon pregnant cows ; as Langbehn, from several years' experience, says he has seen cows partake of mouldy hay and straw without any apparent ill-effect ; but we can hardly think such could be the case, for it is a common occurrence to see mouldy food cause irritation of the kidneys, Polyuria, and great thirst. The partaking of too much cold water may cause abortion, by cooling the stomach and other organs of the abdominal cavity, including the uterus, in which it causes Anæmia. The same is the case when cows are stall-fed during the night and turned out to graze on the cold grasses during the day, or when fed in the stable upon icy-cold roots. Mainz saw six cows abort after being fed upon frozen cabbages. Hansen's experience with frozen rape is similar.

Because cows frequently abort about the time when rye becomes ergotized (*Secale cornutem*), it is generally believed to be due to the animals eating it ; but it is thoroughly well proved that ergot of rye only causes contraction of the uterus when labour-pains have already appeared, and if this is not the case the ergot is inert. In the Dresden Veterinary School, 210 grammes of ergot of rye were daily administered to a cow with impunity.

Fright and external violence may cause abortion, and ought not to be forgotten when giving prophylactic rules for this evil ; but of course this never causes enzoötic and epizoötic abortion.

We will now consider the influence of infection in spreading this malady. It is thoroughly well known that owners of stock, and some veterinarians,†

* M. Jules Gerard, Avortement Enzootique. Annales de Medicine Vétérinaire de Belgique, Bruxelles, 1871.

† See, among others, Boratning om Dyrlangeforaningens Möoa. Bd. 5, s. 239.

consider it infectious, but they are not unanimous as to the nature of the contagium, or the mode and manner of its action. Zundel says that it is due to a fungus (*Penicillium glaucum* and *Aspergillus*), which forms in the fœtal membranes from decomposition after the birth of the calf, and becomes expelled with the vaginal discharge, and bringing this fungus in contact with pregnant animals (according to Professor Frank) causes abortion. The contagious nature of this secretion is supported and confirmed by Professor Roloff, for he says that reddening and swelling of the vaginal mucous membrane always precedes abortion. Brauer has taken some of the vaginal discharge from a cow which had given premature birth to a calf, and introduced it into the vagina of a pregnant cow, and abortion followed in nine days. In other cases the cows did not slip their calves until from the eleventh to the fifteenth day.

It is supposed that pregnant cows lie upon the straw, excrement, etc., of animals that have aborted, and the infectious matter adheres to the vagina. This idea is supported by the fact that uncleanliness increases the number of cases.

I think we ought to be very cautious in receiving such theories : they are certainly consoling, inasmuch as they satisfy people's minds, and prevent them from seeking for other causes, but on this account they are very injurious. There is no doubt these low organisms are formed when the membranes are retained and decompose, but we do not always find abortion occur in other cows when this is the case. My own experience is, that abortion does not occur from cow to cow, but passes indiscriminately from one end of the shed to the other, attacking first one and then another. Further, one is not sure that fresh cases will not occur, even if the animals which have aborted are instantly removed from the shed. On the other hand, it would not be right for us to deny the possibility of contagion in these cases ; we must therefore explain it in another way. From the decomposition of the membranes and the ichorous fluid formed, we find fœtid gases and Bacteria develop, as well as other microscopical fungi ; and since these can mingle with the air of the shed, it is evident that cases might occur in proportion to the uncleanliness and ventilation of the shed, and the number of animals which have aborted in such shed. The relations are analogous to what takes place in lazarettos, in which patients lie with large, dirty wounds, and in consequence develop malignant hospital diseases ; and the possibility that abortion may be caused in a similar manner is quite within reason. But there are many other modes of infection to be considered, which might apply equally well in these cases, before we can put any confidence in the ideas of Zundel, Frank, and Roloff.

It is evident that the disease does not cease by any of the necromancing, or the so-called sympathetic agents, such as hanging pebbles, dead magpies, or killed foxes, in the stables ; yet, even in our day, we find some people explain the disappearance of cases to these stupid agencies, and the only answer they give us when questioned upon the point is : "Well ! they do no harm, if they do no good." But it is clear that men would not resort to such means if they had no faith in them. If anything is to be obtained to counteract cases of abortion, we must work rationally, and not tire or become impatient even if our endeavours prove unsuccessful.

We will now endeavour to sketch out a plan to enable us to overcome this evil, which will be much easier if we bear in mind the causes above given.

Above all, we must avoid milking pregnant cows too long, and especially those animals which have only had one calf. Abortion in heifers is a great loss, and should receive our best attention to endeavour to prevent cases occurring. M. Hillerup has communicated that he has had fewer cases of abortion in heifers since he began to dry them earlier. At a meeting of an

agricultural society, it was propounded that heifers should not be allowed to calve before they were two and three-quarters to three years old, and this was qualified by the further statement that a certain gentleman allowed his heifers on one farm to calve at two years old, whilst at another he kept them till three before they calved. On the first farm he had twice as many abortions and barren cases as he had on the other, although they were fed and treated in exactly the same manner. This statement, however, met with general disapproval, for they all thought that it was necessary for the management of the farm to have heifers calve early in spite of the losses from abortion.*

When cows are first turned out to grass, they should not be hungry, nor should the fields be covered with dew, and the herdsman should receive instructions to watch them frequently, and if any should suffer from Tympanitis they must be removed to the shed again. On one farm there were formerly several cases of abortion soon after the cows were first turned out to graze in July, but now those which aborted the previous year, as well as the heifers—especially those with the second calf—are turned into less luxuriant pastures, and abortion has ceased. Cows ought not to remain out too late in the autumn, but they should be brought up into their stalls, at least for the night, as soon as the weather commences to become cold; for if allowed to remain late in the season they either catch cold or become emaciated, both of which, as we have previously explained, are causes of abortion.

When cows are first changed from pasture to stall-feeding, it ought to be done carefully, so that no derangement of the digestive organs is produced; thus for a time they ought to receive their liberty for exercise and water. The water should be fresh and good, but not cold. Eletti reports a case where abortion ceased in a herd as soon as the water—which came from a field manured with guano, and contained a large quantity of organic matter—was changed. Cows which have just been taken from the autumn grasses, as well as poor pregnant animals freshly purchased, should be fed regularly, and the food should not be of too stimulating a character. When they have been fed in the stall for some little time, and become used to the feeding, they may receive more and better kinds, but at the time of calving it is advisable to lower the feeding again.

Pregnant cows should have the best food possible—all damaged, mouldy, and musty fodder should be rectified, if possible; all the worst should be destroyed; the rest may be exposed to the sun, and mixed with a little salt before being given to the cows. Corn ought also to be added, with bitter and aromatic substances, to keep up the strength of the animal. Food may appear to be wholesome to the unaided eye, and still contain some deleterious substances which will cause abortion. Thus Sjöstedt† mentions a case where abortion occurred whenever the people bought their oil-cake from a certain dealer, which was supposed to be cheaper than could be purchased elsewhere. One gentleman, who had two farms, bought this cheap cake for one, where he had several cases of abortion, whilst his stock at the other farm received cake from quite a different source, and remained perfectly healthy. Therefore Sjöstedt was of opinion that the cake contained mustard, because the mucous membranes of the eyes and mouth of the cows were affected.

From the fact that cows which abort always cause greater restlessness to

*"Ugeskrift for Landmänd." 1668. II., s. 49.

One farmer, who had sixty-eight cows, had twenty-eight abort between June and October. These cows had connection with the bull in March, and were then turned upon good clover, which caused a considerable increase in the quantity of milk secreted; and I think there can be little doubt that this was the cause of the abortions, aided, perhaps, by the cold, wet weather which was present in September and October of the same year.

† Tidskrift for Veterinärer og Landhus höllere. Stockholm, 1876.

their neighbours than cows which calve normally, it is advisable to remove a cow as quickly as possible from the others, and isolate her until she is convalescent and all vaginal discharges have stopped. It is also advisable not to let her have the bull again too soon. M. Ammpen (veterinary surgeon, in Holt, Schleswig) says that if cows are allowed the bull soon after they have given birth to a fœtus, they are very likely to abort again; therefore he always made it a practice not to allow the cow to be bulled until after the proper period of normal calving was over. Besides this, the practice is useful to allow time for the uterus to recover its natural condition.

All disturbances, pressure, blows, etc., to the abdomen should be avoided. Therefore, great care is required when the animals are set free for exercise or water; it is also essential that they should have sufficient bedding. Solution of arsenic when applied to the skin kills parasites, but it also frequently causes abortion.

Sheds in which cows have aborted should be well cleansed with a solution of chloride of lime to prevent the air becoming foul, etc. When the cows are out of the shed all the windows and doors, etc., should be left open to admit fresh air; and in bad cases, where a number of animals abort at the same time, they should be removed from the shed, which should then be washed with chloride of lime, and fumigated with chlorine vapour after closing all crevices.

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## HUMAN AND ANIMAL VARIOLÆ: A STUDY IN COMPARATIVE PATHOLOGY.*

BY GEORGE FLEMING, F.R.C.V.S., ARMY VETERINARY INSPECTOR.

*(Continued from p. 192.)*

It has been stated that Cow-pox is now a very rare disease, and that the probable cause for its being more frequent in the days of Jenner was the much greater prevalence of Small-pox; thus leading to the inference that the one disease was dependent on the presence of the other. But this statement will not bear close examination. We have no definite evidence to prove that Cow-pox was a common disease before vaccination became general, nor yet that it is a very rare malady now; still less that its frequency had any relation to the occurrence of Small-pox. We have only the testimony of Jenner, and two or three other observers of the early part of this century, and they may have witnessed merely local outbreaks, such as occur now and again in different countries. It appears to have been known from time immemorial, and was certainly so in India, Persia, South America, and the continent of Europe long before the time of Jenner. But it had not been studied until Jenner's discovery, and its presence may have often been overlooked, or it may have been confounded with other bovine disorders. Soon after the announcement of the protective influence of vaccination on man, Cow-pox was sought for and found at Castres, Nancy, Metz, Strasbourg, and Rambouillet, in France, as well as in various parts of Italy, Prussia, Spain, Wurtemberg, Holstein, Denmark, and elsewhere in Europe. That Cow-pox did appear, and that it was, perhaps, somewhat common in that part of Gloucestershire in which Jenner resided, and indeed in many places in England, is not at all denied; but that its prevalence was owing to Small-pox being rife, is opposed to all clinical and experimental evidence. Small-pox is transmitted with difficulty to the cow, and does not produce Cow-pox, as I have already asserted. If Cow-pox was more common a century ago than at present, this may be due to the greater care bestowed upon cattle in their dwellings, and more general

* From the *Lancet* for February 14th.

good management now than formerly. Dairies are kept cleaner and more wholesome, and people who milk and go among cows are more proper in their own persons than they probably were years ago ; consequently, if a case of Cow-pox does appear, it has not the same facilities for transmission to other cows. This transmission appears to be mainly effected by the milker ; the vesicles, being chiefly localised on the udder or teats, are ruptured in the act of milking, and the virus on the dairymaid's hands is transplanted to the lacteal apparatus of the cows she next milks. Sores are frequent on the teats, and the presence of these renders vaccination all the more certain. It is very unlikely that people affected with Small-pox would work in dairies, and still more unlikely, if they did so, that they would infect the cows. If Cow-pox could be produced through the medium of diseased dairymaids, it ought to be more common now than before vaccination was introduced, seeing the great difficulty with which Small-pox is transferred to the cow (when it does not produce Vaccinia), and the readiness with which this animal is vaccinated.

If Small-pox could accidentally give rise to Cow-pox, surely evidence of this would be forthcoming at the present day, when we have frequent, severe, and extensive outbreaks. There are certainly instances recorded of this so-called accidental transmission, observed many years ago, as well as coincident outbreaks of Cow-pox in localities where Variola was prevalent ; but these instances are so very few, and depend, seemingly, upon such a mere chance, that they cannot be accepted as affording reliable proof of the actual possibility of such transmission ; while the fact that Small-pox prevails intensely over wide districts at times, without Variola being observed in the bovine or other animal species, as well as the other fact, that Cow-pox is observed here and there—individually, sporadically, enzoötically, and even epizoötically—without, however, Small-pox being observed, goes far to negative the likelihood of accidental transmission.

That Cow-pox may be a less frequent disease in this country than formerly, is quite possible, and, for the above reasons, very probable ; though in this respect England would not be an exception, for the veterinary professor, Spinola, mentions that it was a somewhat common malady towards the end of last century all over the German littoral of the Baltic, but to-day it is rare. Like all other diseases of this kind, however, it would appear to have its periods of subsidence and recrudescence. Neumann states that in Holland, in certain years, it was seldom seen, while in others—as in 1805, 1811, and 1824—it was rather frequent. Ritter says that in Schleswig-Holstein it is always present to some extent, but that in some years it assumes an epizoötic form, and is propagated from herd to herd—as in 1824, 1826, 1829, 1830, and 1832.

Now and again, too, we read of isolated outbreaks in different countries, which attract attention because of the large number of animals affected. The most recent of these is that recorded by Professors Oreste and Sabbatini in 1876 (*Gazetta Medico-Veterinaria*), as occurring among a herd of buffalos, more than two hundred of these animals, young and old, being attacked. The eruption in the cows was chiefly confined to the udder and teats, but the sucking-calves had it on the nose and lips. The pigs which consorted on the same pastures were not infected. The eruption was typical. According to the *Deutsche Zeitschrift für Thiermedicin* (December, 1879), Cow-pox appeared as an epizoöty in the summer of 1876, in the vicinity of Reykjavik, Iceland. It had never been seen there before, and caused very great alarm ; all the milch cows became progressively affected, and in several instances milkers got inoculated in the hands. Neither in this, nor any other of the outbreaks mentioned above, is any allusion made to Small-pox being prevalent in mankind.

In this country we have no means of arriving at any conclusion in regard to the extent to which it may prevail, as no reports are called for by Government, and veterinary surgeons are seldom, if ever, required to attend cases of Cow-pox, these being usually so trifling. Indeed, it is not at all improbable that many pass unperceived, and those observed are not mentioned by dairy-keepers or milkers, or they may look upon the eruption as analogous to that which is sometimes seen on the teats or udder after parturition. The vesicles are broken, too, almost before they are developed, in the act of milking, and the sores which result are considered to be only simple abrasions or fissures, so common in this region. Therefore it is that there are very few veterinary surgeons, even of those practising in the most populous cattle districts in this country, who have ever seen a case of Cow-pox. But we see no reason for thinking that the malady is much less common here than elsewhere—say in Wurtemberg, where the Government reports, drawn up by district veterinary surgeons, are very full and complete, and where rewards are offered for every case of Cow-pox from which children can be vaccinated. According to Hering (*Repertorium der Thierheilkunde*), in Wurtemberg, during the ten years from 1827-37, there were sixty-nine cases out of eighty-four which furnished an excellent vaccine lymph, and 152 out of 208 cases in which the lymph did not yield such satisfactory results; making in all about thirty reported cases every year. In 1873, there were thirty-nine cases, from which fifty-two children were successfully vaccinated; the cases were most numerous in April (18), May (13), and June (8), and one instance of accidental infection was reported—a farmer's wife, who had milked a cow in which the pustules had arrived at maturity, had a vaccine vesicle on the thumb. In 1874, twenty-four cows and four heifers were reported, but complaints are made that the information with regard to these came too late to make many of them available for vaccination—the pocks being either in the last stage, or ruptured, and only sores remaining. Nevertheless, lymph was procured from twelve, and with this twenty-five to thirty children were successfully vaccinated. Some interesting details are given with regard to these cases of Cow-pox, one of which was an example of *Variola succineæ*. Surgeon Löffler, of Rottenburg, received on April 20th, one of the heifers—a two-year-old animal, twenty-five to thirty weeks pregnant, and very healthy. On the two posterior teats of the right side were three fine pustules, and on the last teat of the left side was another. On opening these a yellowish glutinous fluid escaped. On the 23rd, new pustules appeared. The udder and teat were hot, and on the latter were several small and large oval pustules, each with a red areola. When opened there flowed a yellow thick lymph from them; there was a very small quantity of clear lymph at the end. Two children were inoculated by puncture, and an additional quantity of lymph mixed with tepid water, was poured into the wounds. In one child there were developed four perfect and fine (*Vollkommen schöne*) silver-hued pustules, and in the other child one pustule. From these two children five others were successfully vaccinated. Another similar case is related by Dr. Kieser, of Gmünd, in which the cow was three years and a half old, and yielded lymph with which three children were vaccinated, and from these a large number. The details of these cases are full of interest, but I cannot dwell upon them here. I may mention, however, that among the cows were two cases of *V. vacc. nigr.* In 1875, twenty-three cases of genuine, and seventeen of spurious Cow-pox were reported. Nine of the former yielded satisfactory inoculations in children, and the owners of the animals were consequently rewarded. One cow was reported to have shown a succession of genuine pocks for two years; it was seven years old, and was pregnant with the fifth calf. On the udder, on April 14th, were a number of pustules, from the size of a pea to that of a kreuzer, surrounded by a red border, and containing a partly watery-looking and

partly milky-looking lymph. In the course of the next day the pustules became desiccated. On April 24th, four new pustules were seen, these soon became encrusted, and were succeeded by others which were merely abortive pustules, and the case continued under observation for some time, not as one of Vaccinia, but as one of Chronic Pemphigus. In 1876 it is again complained that cows were only reported as affected with pock when they became visibly unwell, the secretion of milk diminished, and the teats so swollen and sore that milking was impossible. There were forty-six cases reported, twenty-one of which were genuine, and twenty-five spurious. Successful vaccinations were notified in a number of children, as well as some instances of accidental infection. One of the latter was a girl who daily milked a cow which had calved fourteen days previously; three teats of the animal had sores and pustules on them, and the girl inoculated her nose through scratching it while she was milking. In 1877 it was very prevalent, especially in July and August; in many cases difficulty was experienced in milking the cows, the mammæ often requiring to be relieved artificially, and Mammitis being frequently observed as a complication. Several cases were timeously reported, and accidental inoculation of people was noted. In the ambulatory clinic of the veterinary school there were 106 cows affected with ordinary Cow-pox during the year, and eleven with the tubercular or nodular form (*Knotenförmigen*). In 1878 thirty-six cows and two calves were reported, but in consequence of reaching them at an unfavourable period, lymph was collected by the district veterinarians from only five cases; this was successfully utilised. The Minister of the Interior had offered a reward of twenty-four marks to owners of cattle for every animal they timeously reported as suffering from Cow-pox.

None of the other German States include this disease in their reports. Belgium has issued recently a Health Report of Animals ("Etat Sanitaire des Animaux Domestiques"), published in the Bulletin of the Conseil Supérieur d'Agriculture. In that for 1877, I find that at Châtelet there was an outbreak of Vaccinia among dairy cows; but when the veterinary surgeon saw them the attack was subsiding, and on the cows still affected the pustules were either broken or dried up. Before the eruption appeared the cows gave an abundance of milk, and were grazing in the fields. At Wommen a large number of cattle were affected with Vaccinia, and the same reporter mentions pigs as being affected with Variola in the same district.

Cow-pox appears in the Danish Health of Animals returns; and I observe that in 1875 there were included in the returns twenty-six cases of natural Cow-pox throughout Norway, while in 1878 there were reported 581 cases in sixty-nine localities, forty-five of these being in Northern Seeland. They occurred, as in other countries, all the year round, but were most numerous towards September.

I have taken the liberty of bringing forward this evidence to prove that Cow-pox is not an extinct disease; that the chance cases reported in such small countries as Wurtemberg, Belgium, and Denmark amount to a considerable number in the course of the year; that there is ample clinical and experimental proof that the malady is really Vaccinia, and has no relation whatever to human Variola; that the presence of the disease in isolated cases, or in a sporadic condition, gives it the power of assuming an epizootic form when circumstances permit; and that, although it is more or less denied that Cow-pox exists in this country, there is every probability that it is at least quite as common as in Wurtemberg, though perhaps less so than in the days of Jenner.

With regard to the localisation of the disease in the cow, it is quite true that the mammæ and teats are the special seat of the eruption, just as the mouth, lips, and limbs are the ordinary situation of the Horse-pox. Never-

theless, cases now and again occur in which, as also in the horse, the eruption is not limited to the usual parts, but appears on the muffle, nostrils, and other regions where the skin is thin and the hair scanty. Pilger, D'Arboval, and other veterinarians testify to this, as also do the Wurtemberg reports. But the eruption is very far from being general over the body, even in these instances.

The female sex of the animal has been brought forward as an argument in favour of Cow-pox being communicated by the hands of persons affected with Small-pox. But it is quite forgotten that there are more cows than bulls or bullocks ; that they are generally completely under observation in cowsheds ; that when in milk their teats are constantly handled, and therefore the eruption can be felt and seen, while inoculation from cow to cow is made all the more easy, and the disease, consequently, much more diffused than it would otherwise be. With the bull or the bullock, on the contrary, there are none of these opportunities for observation or extending the contagion. The bull is seldom indeed with the cows, and then only for a brief period ; while the parts which might be the seat of eruption are rarely handled, and perhaps never examined. The bullock is still less, perhaps, exposed to contagion or submitted to examination. But I entertain no doubt whatever that both the bull and the bullock do suffer from Vaccinia, and it is quite ridiculous to imagine they do not. Male bovines have been largely employed in vaccination experiments on the Continent, and the vaccine lymph has acted as promptly and effectively on them as on the cow. At Bâle, the veterinarian, Sigismund, for a long time furnished the vaccinators with lymph cultivated on bulls which were intended for slaughter ; he inoculated them on the scrotum. Chauveau has also successfully vaccinated bulls, and so have other experimenters. Roloff, of the Berlin Veterinary School, has demonstrated how easily the bull could be infected. He slightly abraded the skin of the scrotum, and gently rubbed the vaccine lymph upon it ; the characteristic eruption took place in due course. If bulls or bullocks stood in cattle-sheds with an equal number of cows, and were treated and exposed to contagion in the same way as these, there is every probability that we should have bull or bullock-pox frequently enough. Where this association is allowed to take place on the Continent, bulls and bullocks are infected. An interesting case of this kind is recorded in the *Repertorium für Thierheilkunde* for 1879. A bull, two-and-a-half years old, is there described as affected with Vaccinia, the pustules and crusts being situated on the scrotum, a hind and fore foot, and lips. The animal suffered a good deal. The lymph from the pustules was employed with success in the vaccination of children. So that it is simple nonsense to assert that the male bovine is exempt from Vaccinia; and it betrays ignorance of what has been observed by competent men, as well as lack of knowledge of pathology in general and this disease in particular.

*(To be continued.)*

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## ON THE PROSPECTS OF VETERINARY STUDENTS.*

BY J. H. STEEL, M.R.C.V.S., ROYAL VETERINARY COLLEGE, LONDON.

SIR AND GENTLEMEN,—

An apology is due for the nature of this paper. It was commenced at 10 p.m. on Saturday last, and is now presented to you. My name was on the list of essayists to fill a gap, if such occurred. I hardly expected to be so suddenly called upon, but have done my best to give you, in a systematic form, my humble ideas on a subject of paramount interest to you and

* Read before the Veterinary Medical Association.

to your teachers. My reason for especially bringing this subject under your notice is, that I believe no one man is capable of thoroughly viewing the matter, and therefore, by free discussion of it, we may gain general views, and perhaps correct any of our special ideas which tend to narrow-mindedness. It cannot be doubted that the majority of students come to college with very narrow views of the nature of our profession. And I fear that in some cases such remain uncorrected, even after these students have been launched into full professional career. Many, however, after becoming qualified, enter with zeal into professional questions, and to these is due the greater part of modern progress. To cite examples in illustration of this statement is not necessary, for such will occur to most of you; but I may be allowed to give you a friendly warning, lest, while avoiding the Scylla of political intrigue and jangling, you fall into the Charybdis of slothful empirical practice of professional details, and of oblivion of the interests of the profession to which you belong, and under whose banners you range yourselves in claims for public patronage. When entering into practice, retain both professional feeling and zeal for the advancement of science. You will, all of you, I hope, shortly experience a novel sensation. The eventful examination has taken place; you have proved yourselves fit to become professional men; a legally authorised body has admitted you as a member: the feeling is one of proud triumph at success, and unclouded hope for the future, so long as the whirl of excitement lasts. You join your comrades in mutual congratulations. You visit your old seat at college, and perchance, as you leave it for ever, "cast one longing, lingering look behind;" for the associations of college life are dear, and even the mute witnesses of our labours are not matters entirely of indifference to us. You say farewell to your ex-teachers with a feeling of equality, and sincerely thank them for past services, or charitably forget apparent oversights and deficiencies. You feel well-disposed towards all the world, and the world is about to receive you in its hard and pitiless grasp! Hitherto you have been supplied with means by parents or others. You now receive a letter or a hint that, as a professional man, you are in a position to earn your own living, and thus a question which has occupied your mind since your success presents itself with urgency. Your spirit of independence and duty alike prompt you to embark in earnest efforts to live independently. Your consideration of this matter takes colour from the following conditions:—

(1) Original social position;
(2) Preliminary education;
(3) Pecuniary position;
(4) Professional experience; and
(5) Address and character.

*Social position.*—In reviewing the material of which the student element at a veterinary school is made up, I observe men of certain stamps frequent; and from my personal knowledge of students, am in a position to describe them with a fair degree of accuracy. In these delineations I shall adopt no precedency, but draw my portraits from my own mind, and in the accidental order in which they suggest themselves. We start in our professional careers either in the desire to emulate some person in an established position, or in the wish to attain some place in society which seems desirable. Certainly there is such a thing as inherent love for science, but this is quite the exception. We mostly take after our fathers, and thus we have two student elements introduced—sons of veterinary practitioners, and sons of officers in the army, whether veterinary surgeons or others. The increasing social status of veterinary practitioners, and the remunerative practices of certain of them, prove attractive to those brought up to trade and agricultural pursuits, and the latter have the additional incentives, love of animals, and

assurance of the practical nature and value of veterinary surgery. These inducements attract also the sons of men by trade or otherwise connected with animals—horse-dealers, cattle-dealers, butchers, etc. A very important element is the sons of farriers, and of unqualified practitioners; and I am sure none of you will grudge the tribute I shall pay to these men. An idea seems to be prevalent that it is not difficult to become a veterinary surgeon, but those who in the present day look upon our profession as a "refuge for the destitute," find themselves sadly deceived. After hanging on at college year after year, these men become a byword among the students, and finally disappear into that oblivion for which they are best adapted. Besides these which I have mentioned, there are miscellaneous students, of whom I need allude to none especially. Of them, some are amateurs who are attracted to veterinary studies by love of animals, and who are not dependent upon the profession for a living. Cavalry officers, medical men, and others pass through a course of study to fit them for the more satisfactory performance of their professional duties, or to enable them to relieve animals when sick in lands as yet unvisited by veterinary practitioners. While such students generally enter into the matter in the amateur spirit, they (whether they qualify or not) seldom fail to diffuse into their special circles the information that a course of veterinary study is by no means a trivial task, and that the veterinary practitioner is worthy of a better social position than men are generally willing to accord to him. We shall now review the special facts concerning the various classes to which I have alluded.

(1) *The officer's son* generally desires to enter the army, and to attain the social status of an officer. Many "don't care a rap for the profession, provided they get their commission." Many such come to grief in their student career, and fail to become qualified—others have determination to gird themselves to their task. They find that, as they become able to appreciate science, they learn the attractions of professional knowledge, they attain their aim, and become good practitioners as well as good officers. If they do not find this, their energy and tact may enable them to become veterinary officers, but we hardly envy them their constant round of duties, which must seem but a distasteful drudgery, nor the difficulties which are apt to result from professional incompetency or indifference. These remarks will apply to the many, not officers' sons, who consider the veterinary profession an easy way to a commission.

(2) *The tradesman* desiring to become a veterinary surgeon brings to his task business energy and tact, and methodical business habits. He needs them, for in his office or his shop he has had but little opportunity of examining the habits of domesticated animals in health, a knowledge of which is most essential to veterinarians. Hard study, careful observation, and special attention to practical details will generally make such a man a good practitioner. He will find his business urbanity and skill in book-keeping useful to him in practice.

(3) *Farmers' sons* constitute most excellent student material. Brought up to country ways, well acquainted with the habits of all farm animals, with the details of feeding, working, breeding, and dairy management; familiar with certain methods of nursing and certain mild forms of disease, they have a grand start in professional life. With *mens sana in corpore sano*, they gird themselves to the task of surmounting any slight difficulties which the Matriculation Examination presents to them, master the technicalities of chemistry, botany, and anatomy, and the rest of their work is a labour of love. Those with an Agricultural College training ought to find no difficulty in retaining the good start which is given them beyond their fellow-students.

(4) *The sons of veterinary surgeons* generally commence their work with a constant evidence before them of the position which their studies may

ensure to them, as well as with the satisfactory feeling that they will, when qualified, be able to take in hand that which has been prepared by paternal labour and zeal. The precepts of their fathers, the observation of their practice, and the judicious guidance of their general and special education give these students opportunities not to be despised. Knowing the style of practice for which they are destined, they are apt to neglect professional matters which are not likely to be useful to them. This tendency must be averted.

(5) *Farriers' sons, etc.*—Men brought up to the forge or to the training stable, or connected with hunting establishments, and otherwise by their business associated with animals, and, as a rule, accustomed to treat them empirically, experience the want of scientific training. They are desirous that their sons shall obtain that education which they themselves have lacked. They impart what knowledge they can to the chosen one of the family, and economise to keep him at college. He enters as a student with rough manners—which, however, polish by association. He has a clear understanding that his sources of supply are scanty, and thus he must do his work well and quickly. If he succeeds he will become a professional man, will distinctly advance a grade in society ; if he fails, will lapse into the forge from whence he sprung. He finds that the practice which his father has shown him empirically must be amended by science ; he brings his practical knowledge of the management of horses to bear on his studies ; his manipulative skill proves very useful. Such men are a most valuable source of supply of professional material. The work of these in entering the profession is uphill, and only energy of character can surmount the obstacles in the way. The profession thus gains valuable new blood. A knowledge of forge-work, of training-stable routine, and of the management of a stud is highly useful to a young man commencing a veterinary career. To a less degree, acquaintance with dairy and kennel management, and the feeding, fattening, and breeding of stock proves markedly beneficial. To view a horse, ox, sheep, or dog with the eye of a critic, and to know how to sit well down in the saddle across country, and how to feed and work horses of different kinds are highly valuable to a veterinary surgeon ; but they must be looked upon as subordinate matters, affording a good basis to start with, but quite attainable after graduation ; in accordance with the class of professional duty which may fall to the lot of each; his professional studies will make him acquainted with the theory of these matters. A general acquaintance with all of them is required but from the few.

(6) In observing the miscellaneous set of students, we have sometimes been amused at seeing the son of some member of the older professions, some sprig of aristocracy, or some purse-proud upstart enter upon his studentship evidently under the idea that he is doing a favour to the profession. Such either very soon alter their ideas, or suddenly disappear, finding "the veterinary students a low set," or haunt public-houses and music-halls until some flagrant act of insubordination necessitates their removal by the authorities, or in very shame their relations remove them from the unsatisfactory state of confirmed chronicity.

Men from these different sources differ very much in their mode of address and habits, and thus their fitness for their future career and their professional prospects will be influenced. We see some smart, lively, good-looking fellows, handy with horses, with a fair knowledge of dogs, used to hunting and shooting, able to handle a billiard cue, and we somehow or other associate them with the army. They do not seem very keen after cattle-practice, and when they "turn up" at the cattle-sheds, are generally lookers-on rather than handlers of the beasts. They seldom throw a sheep, except to decide a bet as to whether they can do so.

Again, we observe men, sometimes, with a slight tendency to tightness of trousers, who seem to be everywhere about the college. All the parts of the infirmary are familiar with their presence; they are critical in the operating theatre; confident and eminently useful in cheap practice; can be trusted to administer medicines, handle animals in a proper manner, and are always ready to apply a twitch, give a ball, or hold up a foot. We look upon them as likely to make excellent practitioners; they view matters with a utilitarian and practical eye—not unfrequently may be found surreptitiously performing operations on other men's dissecting subjects, and are not *quite* appreciative of science on its own account. They look forward with some confidence to the attainment of their "tickets," and may be termed essentially *business men.* New students are often of the burly rural stamp, with a local accent, and rough habits and address, stolidly contented, or good-naturedly jovial. Such men are apt to become the butt of their livelier companions, but this tendency is checked when the physical energies of the victim reduce the tormentor to the position of Pat, who "caught a Tartar."

These men, I observe, have generally true British pluck and staying powers. They do their work regularly and thoroughly, and become most excellent country practitioners.

Some men seem peculiarly endowed with the scientific habit of thought. They work their matriculation papers on system, and so come out high on the list. They take very kindly to the collateral sciences, but materia medica seems very indefinite to them. They so quickly grasp facts and laws that they are apt to neglect minutiæ. They are soon looked upon by their fellow-students as "well up." They are sought after with the greeting, "Give us a grind, old man." They sometimes put hobbles on the wrong way, and do not always succeed in throwing a sheep properly. Their dissecting tools are not always clean. They record all important cases, and take valuable notes. They shine at written examinations, but are a little awkward practically. Such students should force themselves to observe minutiæ apparently of little scientific value, but highly important practically. If they can succeed in doing so, they become the representative men of the profession. Their love of science will keep them to the front. They will become the representatives of veterinary surgery in the world of science. Better adapted for administrative than for executive duties, they can fill with credit government offices, military or civil, and the posts of teachers, which are so important to the profession.

Practice in the poorer districts of some of our larger towns requires men of a special stamp, such as are not wanting among students—active business men, keenly appreciative of the value of money, skilful in detecting the devices of low horse-dealers, *et hoc genus omne*, and able and willing to supervise forge-work. Not the least valuable traits in their character are, promptitude in emergency, and quickness of tongue, which fit them for opposition to the empiric who endeavours to outbid them in practice. Such men are useful veterinary pioneers, and thus are highly valuable to the profession.

The man who has "seen practice," and is constantly telling us so, is a special character. Perhaps he has been three years with a practitioner, and familiar with animals all his life. He is particularly officious when operations are on, and proves very useful then, or in the administration of medicines. He operates very boldly whenever he has an opportunity, and is probably particularly neat at *firing*. He talks greatly about experience, and scorns science, and the reasonings based on it. He brings to college with him some ancient note-books, and regards these as oracles remarkable for infallibility. Books, especially recent ones, he considers unnecessary. Unless he somewhat modifies his ideas, he periodically learns that examiners do not share his opinions on scientific matters, and at last he lapses into

chronicity. It is, doubtless, a very good thing to see practice, but we must remember that one case well *observed* is worth twenty *seen*.

I cannot help alluding to those excellent tacticians who sometimes are found amongst us, who seem somehow or other to always pass their examinations, and to get on very well without much work. Such men do not become scientific, but their plausibility renders them at home almost anywhere. They never do the profession discredit, and are always presentable. The light-hearted way in which they view life often secures them local and professional popularity. They are most useful members of veterinary societies as they come out strongly in the social line.

Here I may insert a few lines on the value of a good address. It is always to be cultivated, as tending to assist in obtaining appointments as well as to succeed in practice, and being of great use in the examination room. The *viva voce* system must always prove a useful part of veterinary examination, for in practice a veterinary surgeon is constantly being subjected to oral tests, and "stiff" ones too.

General preliminary education must be looked upon, not merely as giving an entry into the profession, but as a great aid to after success. Enlightened and liberal views are essential to every man who wishes to hold a prominent post in his profession. Thus, professional officers and teachers must be gentlemen in manners and education, to uphold the position of the profession they are so often called upon to represent. Army veterinary surgeons must always be fit to associate with gentlemen of liberal education. The private practitioner will always find general information of great benefit, though he will learn a very great deal from that noblest study of mankind—MAN. Many private practitioners are gentlemen of culture, and this adapts them for high social status, such as is implied in election to corporation posts, and some even prove adapted to scientific positions of local importance. General science, however, retains its hold on the minds of but the few.

Mediocrity asserts itself among veterinary students as in other ranks of life. Men deficient in natural ability, others deficient in stability, and some suffering from other disadvantages, often gain entry into the profession, either by chance or persistence.

Experience is valuable to the recent graduate, whether as a basis for testimonials of fitness for appointments, or as rendering him self-confident and fit for his duties. All professional experience has its price ; a knowledge of general practice, acquaintance with official routine, with the methods of agriculture, or of human medicine, are useful in certain cases, and all students should aim at variety of experience. Each practice has some special features, as we shall see, and we should endeavour to learn theory while seeing practice. In all cases, too, written records prove most valuable as a means of obtaining *sound* results ; the mind is treacherous, and unless you take careful notes you will not obtain the best results of your labours.

A man who has not seen practice must as soon as possible endeavour to repair this unsatisfactory state of affairs. This he may do by tendering his services to a practitioner as an assistant or improver. He must remember that he is receiving knowledge in payment, or part payment, for his services, and must not neglect to avail himself of the opportunities thus afforded, nor expect the mere possession of a diploma to ensure him full professional remuneration and other advantages. If a man without any practical experience goes at once into practice, he will find, that whereas the young practitioner will always have to work hard, and with little remuneration for the first two or three years, *he* will have still harder work, and will many a time feel inclined to throw up his profession and start again in life. He will find himself devoid of practical tact, ignorant of professional fees, and unable to inspire his clients with confidence. He will make many errors,

and will keenly feel these—but we all make mistakes, and many allow that when we do so the ignorance of the public often gives us credit; a long and anxious case, on the other hand, though successfully treated, may not secure us any applause. If he has money, let him still adopt the course I have mentioned, for he will then be more open to urgency from his employer if he grows slack, and will also be vested with more salutary responsibility. In plain words, he will have to "rough it," and that is just what will be best for him. Let him store up his money; he will always be able to find uses for it.

Some inexperienced men, by influence or luck, obtain official appointments; but this is not always an unqualified good; the effect is as a man makes it. His post may be a useful support while he learns practice, or it may enable him to spend his early years in ease and carelessness, and perchance, in after years, pass from beneath his feet, and precipitate him into penury and distress. A young man with a recent diploma and some experience finds his movements considerably influenced by his pecuniary position. If he has no money, he may try to obtain either a civil or military Government appointment, may obtain a private appointment to a company as veterinary surgeon, may become a veterinary assistant, or may commence private practice. Government veterinary inspectorships are to be obtained through the principal officers of the Veterinary Department of the Privy Council. Election with or without examination are the tests of fitness. Thermometry and the geographical range of disease are insisted upon. Civil Government appointments are very desirable, as ensuring a certain income: they generally are not so onerous as to prevent private practice, nor so lucrative as to render it unnecessary; but they give a *locus standi*, and an introduction to clients, which must be carefully watched lest it prove prejudicial to brother professionals. With county inspection the official duties are generally subordinate to the private, but the reverse results from the nature of port inspectorship duties. The latter posts require a certain amount of special knowledge, as epizoötiology, and the methods of transport of animals, and of hasty diagnosis. Army appointments can only be obtained after a special examination, in which stress is placed upon certain subjects, such as hygiene, injuries and diseases of horses, etc. Though the recent warrant has rendered the Army Veterinary Department a desirable aim for a young, moneyless veterinary surgeon, by enabling him to live as he *should* do on his pay, and to associate freely with his brother officers on terms of equality, let such a man think for himself as to whether he is well adapted for the social and professional duties of this station. If he loves his professional work, undoubtedly he will see more cases in private practice; if he desires to see the world and to taste the pleasures of good society, he will do so better in the army than as a civilian. Do his tastes incline to home and social comforts? let him remain at home and practise. The army, too, is not the place to make money; also not every man by address and education is fitted for the post of an officer. Care must be exercised, then, to avoid entry upon a false position. If a man decides that he is suited for and will like army work, he will find it much as I describe it. The army veterinary surgeon must be a gentleman in appearance and address, must be prepared to associate with the other officers, and be their referee in most matters appertaining to horses, especially hunting; must be prepared to select and purchase for them, hunters, chargers, hacks, etc., and also to select troop and waggon horses, and also those adapted to artillery uses. Each mounted branch of the service requires horses of a special stamp; of these the principal are Light Cavalry, Life Guards, Dragoon, Horse Artillery, Field Battery and transport horses. Most of these will be seen before they have acquired their adult conformation, so that to obtain a well-mounted regiment, skill from the veterinary surgeon is essential.

While these horses serve in the army they must be kept in health as much as possible, and thus the professional attendant must make hygiene in its several branches—as ventilation, forage, shoeing, etc.—a speciality. When these animals are injured he must restore them to their duty as soon as possible, or must promptly decide their unfitness for further duty. He must attend to these matters during the emergencies of the march and of active service in the field. Illness acquired in foreign service, and wounds, may remove him from active professional work, when he will receive a small amount to support him for the remainder of his life ; or he may receive promotion, which leads to no material change in his position until, after nearly a quarter of a century's service, he attains the rank of inspecting veterinary surgeon, which will remove him from executive to administrative duties. Few attain this dignity, and fewer still, by exceptional professional skill, experience, and administrative ability, with great length of service, attain the position of principal veterinary surgeon. The recent warrant provides that after ten years' service, a veterinary surgeon may retire or be discharged from the service with a bonus of £800, but though this money would enable a man to commence private practice, the ten years spent in the army hardly fits him for the struggle for existence with men who have made private business a speciality from their time of graduation. The *crosses* of practice, too, are unpalatable to a man accustomed to be obeyed. And if he has served in India he does not readily settle down again to English home-life. Few therefore will avail themselves of this privilege. The majority will remain until, at a certain age, compelled to retire with a pension for life, after which some try general or consulting practice. It is a good thing for an old soldier to have something to do. Army veterinary surgeons are under constant supervision, and have to fill up reports, and to spend some time over official letters, and sometimes they are sent to special duties of an inspecting nature, as to investigate outbreaks of disease. Novel animals in strange lands—as camels, elephants, etc.—are often the patients of army veterinary surgeons, who therefore require considerable versatility to adapt themselves to the emergencies of campaigning.

(*To be continued.*)

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## TESTIMONIAL TO MAJOR-GENERAL SIR FREDERICK FITZWYGRAM, BART.

It gives us great pleasure to be able to announce that it is proposed to present a testimonial to Major-General Sir F. Fitzwygram, Bart., in recognition of the great services he has rendered to the veterinary profession in this country, and especially as President of the Royal College of Veterinary Surgeons, and donor of annual prizes to recently graduated members. It is proposed that the testimonial should be in the shape of a portrait, to be presented to Sir Frederick, with a replica for the Royal College Council-room. The cost is estimated at from 300 to 400 guineas. Mr. Greaves is Honorary Secretary, and Mr. Cartwright (Wolverhampton) Treasurer, who receives subscriptions. The executive committee is composed of many leading members of the profession.

This movement has our entire concurrence and heartiest good wishes, and we have no doubt it will receive the unanimous support of the profession, whose interest Sir Frederick has so much at heart.

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## THE FELLOWSHIP DEGREE.

At a meeting of the Examiners for the Fellowship Degree on February 27th, the following gentlemen underwent the necessary examination, and were admitted Fellows of the Royal College of Veterinary Surgeons :—

Mr. William Sheppard Wallis, Halstead, Essex.
„ John Wiggins, Market Harborough, Leicestershire.
„ William Albert Russell, Army Veterinary Department, Dublin.
„ Thomas Simpson, Liverpool.
„ Isaac Vaughan, Professor, New Veterinary College, Edinburgh.

The following were the questions in the written examination :—

*Physiology.*

1. Enumerate the functions of the nervous system. State what is meant by reflex action, give an example, and mention in what respect it differs from a voluntary act.

2. What objects are accomplished by the function of respiration? How are these obtained in the different classes of vertebrata? State what conditions and structures are essential to the formation of a respiratory organ.

3. Describe the process of absorption, (*a*) from the intestines, (*b*) from the other organs and tissues of the body. State what changes chyle and lymph undergo as they pass through the glands previous to entering the general circulation.

*Comparative Anatomy.*

1. Describe the chief differences between the digestive organs of a herbivorous and carnivorous animal.

2. State the difference observed in the arrangement of the bones of the anterior extremity of the horse, pig, and dog.

3. Describe the arrangement of the placenta in the mare, cow, sow, and bitch.

*Therapeutics.*

1. What is chloral hydrate? Describe its physiological and therapeutical actions.

2. Describe the physiological and therapeutical actions of alcohol, and state under what conditions its administration is indicated.

3. What are the therapeutical uses of the salts of iron? and give the indications for their administration.

*Pathology.*

1. Describe the nature and characteristic lesions observed in "Anthrax" or "Splenic Fever."

2. Enumerate the different forms of "Pneumonia," and describe the appearances presented in the various stages.

3. What are the principal differences between the morbid conditions known as "Hæmaturia" and "Hæmoglobinuria"?

*Sanitary Science.*

1. What constitutes the difference between hard and soft water, and how can the degree of hardness of water be accurately ascertained?

2. What is the effect of ergotised food on animals?

3. What sanitary measures are necessary for the prevention of Trichinosis in mankind and animals?

*Epizootology.*

1. What are the influences upon which depend the extension of ovine, bovine, and equine Variola?

2. What is necessary for the successful transmission of a contagious malady?

3. How is Swine-plague extended, and what measures are necessary for its limitation or suppression?

*Surgery.*

1. Describe the covered operation in castration, and state under what circumstances it is desirable to perform it.

2. State the principles which should guide you in operating for "Poll Evil" and "Fistulous Withers," and how you would proceed.

2. State how you would treat a "Chronic Quittor," and what surgical operation, if any, you would perform for its cure.

*Dietetics.*

1. Name the nitrogenous and non-nitrogenous elements of cereals.
2. State the comparative dietetic merits of oats, beans, Indian corn, and bran, and give your reasons.
3. State in order the hours for feeding and watering, and the quantity of food and water which you consider essential, under ordinary conditions, for an average farm horse in the twenty-four hours.

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# Proceedings of Veterinary Medical Societies, etc.

## LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

THE annual meeting of the above Association was held at the Blackfriars Hotel, Manchester, on the 19th of February, 1880; W. Dacre, Esq., President, in the chair. The following members and friends were present:—A. Gamgee, Esq., M.D., F.R.S., Professor of Physiology in Owen's College, Manchester; Dr. Renshaw, of Altrincham; Dr. Owen, Manchester; J. Lambert, 17th Lancers; S. M. Wilson, 12th Lancers; W. A. Russell, A.V.D.; Messrs. Peter Taylor, T. Greaves, Tom Taylor, John Lawson, W. A. Taylor, A. Lawson, E. Faulkner, T. Hopkin, J. B. Wolstenholme, and E. Kitchen, of Manchester; R. Roberts, of Kendal; J. B. Taylor, Ashton; Messrs. Elam and Hutcheon, Liverpool; J. Bunnell, Oldham; — Freeman, Hull; Peter Walker, Bradford; H. Beard, Macclesfield; J. Howell, Rochdale; W. Woods, Wigan; W. Whittle, Worsley; C. E. Challinor, Pendlebury; W. G. Schofield, Pontefract: T. Briggs, Bury; Mr. Litt, of Bolton, and the Secretary.

Letters of apology were received from Professor Pritchard, Mr. George Fleming, Mr. J. Welsby, Mr. W. Naylor, R. Reynolds, etc.

The minutes of the last meeting were duly read and confirmed, after which Mr. C. E. CHALLINOR begged leave to nominate as a member of this association Mr. T. Stone, M.R.C.V.S., of Walkden, near Manchester.

The President, Mr. W. DACRE, in making a few remarks, said—Gentlemen, I have no intention this evening of reading you a formal inaugural address, but the occasion of our annual meeting can scarcely be passed over without my rising to thank you most sincerely and heartily for the honour and undeserved compliment you have paid me, and my election at your hands to this chair for a second term of office; and I can assure members of this Association that with their support, and the valuable assistance of my fellow-officers, nothing shall be wanting to render the coming year of work one of interest and pleasure, and looking forward to the interesting paper we are to hear this evening, I hope we may terminate our labours as auspiciously as we are about to commence them.

The doings of our small world are so faithfully chronicled in our journals that it becomes a difficult task to speak of anything on an occasion like the present, that has not already been often brought before you in a better form; nevertheless, I am of opinion that your attention cannot be too often drawn to matters of vital importance to the profession—matters that should be found uppermost in the minds of every member of it.

I would speak more particularly of those reforms which we have loudly, persistently, but fruitlessly demanded in years past. You are all aware that the acquiescence of the Highland Agricultural Society to the generally expressed wish of the profession, that they should discontinue the issue of certificates to practise, has brought to a happy termination the dissensions that have so long agitated the profession, and clears the way for the introduction of such measures as will enable the public to distinguish a thoroughly educated and legally qualified person from one who has not undergone the test

of examination, and whose presence among us as a *soi-disant* veterinary surgeon, is inimical alike to the interest of veterinary practitioners and the public; and I think the time has now arrived when the profession should be relieved from the odium attaching to the presence in its ranks of charlatans and pretenders. It has been asked why we desire the insertion of a penal clause in our charter, and it has been said, Surely the gentlemen now leaving their Alma Mater and commencing to practise, are sufficiently strong in practical and scientific knowledge to compete successfully against quacks; and I say, Yes, if that competitor was honest; but when you remember the strata of society from which those persons crop out, and the class from which they are recruited, you will find, as a rule, the type of them is an utterly unprincipled individual. You will observe, gentlemen, that I say, as a rule, for I have certainly met exceptions in unqualified practitioners who would not have disgraced the profession, and I think it would naturally facilitate the passing of a new Veterinary Medical Bill if some special arrangement could be made on their behalf; and I am sure any legislature having for its object the protection of its interests would be universally acceptable to the profession and conducive to the public good.

Quite recently I have had some talk on this subject with an influential member of the Veterinary Committee of the Royal Agricultural Society, and he stated to me his intention of bringing this matter to the notice of that Board. Some four years ago, I introduced the subject to a Member of Parliament, and elicited from him an opinion that the veterinary practitioners had an equal right with the medical practitioners to be protected.

In mentioning these two cases, I merely wished to suggest that practitioners having an opportunity of coming into contact with gentlemen of influence, will greatly benefit the cause by making to them a statement of what we require.

In our friend, Mr. Geo. Fleming, we have one who has never yet taken up his pen without some substantial good to the profession arising out of his advocacy, and you will all be pleased to see the manner in which he is handling this subject.

Before concluding these few remarks, may I be allowed to suggest that if we are to have a new Veterinary Medical Bill, a clause might be inserted praying that veterinary surgeons may be exempt from service on juries? This is a privilege enjoyed by the medical profession, and one to which we are equally entitled; and now, gentlemen, I shall close these few remarks by hoping that a discussion may follow that will call forth the opinion of every one present.

The discussion was opened by Mr. PETER TAYLOR, but in consideration of Dr. Gamgee, it was postponed until the next meeting, and the apprenticeship clause was also added to the list for discussion.

Mr. WM. WOODS begged leave to move, at the next meeting, an alteration of Rule XVII., with respect to the election of honorary associates.

Mr. T. BRIGGS gave notice that at the next meeting he would move that the meetings of our society be held oftener.

*Presentation of Testimonial to Mr. Samuel Locke by Thomas Greaves.*

MR. PRESIDENT AND GENTLEMEN,—I rise on this occasion to perform a most pleasing duty—viz., to present Mr. Samuel Locke, our worthy and respected Hon. Secretary, with a testimonial in recognition of his valuable services. I consider it is alike honourable to him and creditable to the good feeling, the spirit, and character of our Association. We have been in existence about twenty years. During those years we have had many worthy and able Secretaries, who have performed the duties with credit to themselves and satisfaction of the association, but none (and I say it without the slightest spirit of invidiousness), none who has served us so well and so long as Mr. Locke

has done. Sir, your constant willingness, your uniform kindness and urbanity of manner, together with the regularity and efficiency in the performance of your duties, have secured for you the good opinion of your fellow veterinary surgeons, and we feel a desire to show you some mark of our esteem and respect.

The "Testimonial" I have now the great pleasure in presenting you with has been subscribed for by the members of the "Lancashire Veterinary Medical Association" almost unanimously. It is a cabinet, with five drawers and folding-doors, in mahogany, containing thirty-six table and small knives, thirty-six table and dessert forks, fifty-six table, dessert, tea, egg, salt, and gravy spoons, large and small ladles, carving knife and fork, fish slice and fork, napkin rings, sugar tongs and spoons, knife-rests, nut-crackers, etc., etc., all of Roger's best cutlery and the best electro-silver plate—one hundred and sixty articles in all. Every article bears your initial, and on the cabinet is a plate with the following inscription: "Presented to Mr. Samuel Locke, M.R.C.V.S., by the Lancashire Veterinary Medical Association, in appreciation of his services during the four years he acted as Honorary Secretary. 1880." It is considered very handsome, and does great credit to Messrs. W. Batty and Son, silversmiths, Market Street, Manchester. We hope and trust it will meet with your approval, and that you will accept it in the same kind spirit it is given. I feel that I am speaking the heartfelt wish of the President and every member of this Association when I say we wish you the enjoyment of health and every comfort, together with a long, prosperous life, and in this present your children and your children's children, together with all your friends, will see in what respect and esteem you are held by your professional brethren, amongst whom you are toiling and living, and even when you are no longer in our midst, this testimonial will perpetuate your memory, the excellence and worth of character, we now accord to you with so much pleasure.

Mr. LOCKE responded in a few words, thanking the President, Mr. Greaves, and all the members most heartily for their kindly feeling towards him, and for the honour they had conferred upon him in the shape of such a handsome testimonial, assuring the members that he never expected any remuneration for his services, but had accepted the office for the honour of the post, and what he had endeavoured to do was for the success of the Lancashire Veterinary Medical Association and the advancement of the veterinary profession in general.

A. GAMGEE, M.D., F.R.S., Professor of Physiology at the Owen's College, Manchester, then delivered the first of two lectures upon "The Physiology of Digestion."

The worthy Professor (who was received with great applause) commenced by describing the difference in structure between the so-called mucous and serous salivary glands, and drew attention to the changes which occur in the mucous glands when those pass from a state of rest into that of activity. The physical and chemical properties of the saliva were discussed at length, and it was shown that the saliva was a liquid which mainly served mechanical ends, seeing that in a large number of animals it is devoid of the starch dissolving-ferment called "ptyalin."

The various facts connecting the secretion of particular salivary glands with special functions, as deglutition, gustation, mastication, were passed under review, the lecturer pointing out that from them it could certainly be concluded that whilst the parotid gland secretes a saliva specially subservient to mastication, the sub-maxillary and sub-lingual glands secrete a liquid specially related to gustation and deglutition. In this division of the subject the Doctor discussed the quantities of saliva secreted by the principal domesticated animals on various diets.

The structure of the stomach was then described, the description bearing

especially upon that of the horse and dog. The lecturer pointed out that the old views which restricted the functions of the pyloric glands to the secretion of mucus, have been shown to be incorrect, the epithelium at the bottom of all the gastric glands being engaged in the preparation of gastric ferment "pepsine," whilst the large oval (so-called) peptic cells of the gastric glands proper of the older writers are probably concerned in the secretion of hydrochloric acid.

The lecturer then described the properties of the gastric juice, and showed how it acted upon the protoid constituents of food, converting them into peptones. The lecture throughout was fully illustrated by the aid of diagrams and experiments.

In the second lecture, Dr. Gamgee proposes to treat of the digestive changes which the food undergoes in its passages through the small and large intestines.

A cordial vote of thanks to Dr. Gamgee, proposed by Mr. PETER TAYLOR and seconded by Mr. T. GREAVES, for his most interesting and instructive lecture, was carried by acclamation.

A vote of thanks to the Chairman closed the proceedings.

SAMUEL LOCKE, *Hon. Sec.*

## LIVERPOOL VETERINARY MEDICAL ASSOCIATION.

THE ordinary quarterly meeting of this Association was held at the Medical Institute, on the 13th February; C. W. Elam, Esq., President, in the chair.

Letters were read from the Secretaries of the Lancashire, Norfolk, and Yorkshire Veterinary Medical Associations. The Secretary stated that he had not received a reply to his letter from the Midland Counties Veterinary Medical Association.

After some discussion, it was unanimously agreed that this Association nominate for re-election to a seat of the Council of the Royal College of Veterinary Surgeons, Professor Brown, of the Royal Veterinary College, London, and that the President and Secretary act as an Election Committee to make the necessary arrangements for supporting his election, in conjunction with the election of the gentlemen nominated by the Lancashire, Yorkshire, and Norfolk Veterinary Medical Associations.

The PRESIDENT then delivered his introductory address. He commenced by thanking the members for the honour they had conferred upon him in electing him their President, and expressed the hope that his conduct in that capacity throughout his year of office would meet with their approval, and not belie the confidence they had so unsolicitedly reposed in him; as he assured them that no effort should be wanting on his part in order to make the meetings of the Association a success, both professionally and socially. He then referred to the great benefits which Veterinary Medical Associations had already been the means of conferring both on their individual members and also on the profession as a body, and strongly urged us to cultivate unity and *esprit de corps* among ourselves, in order to attain that position in the estimation of our Government and country which the practice of our noble and useful profession entitles us to.

He said we have now got a thoroughly representative council, and we shall have ourselves to blame if we do not send our ablest and best men to represent us there; and if we are only true to each other, and have the best interests of our profession at heart, we shall very soon feel ourselves in a position to demand from the Legislature that legal protection from the unfair and dishonest competition with which the profession has been so long burdened.

He then referred, in congratulatory terms, to the completed arrangements between the Royal College of Veterinary Surgeons and the Highland and

Agricultural Society of Scotland, whereby the latter body will discontinue their veterinary examinations and the issue of their certificates.

He spoke in commendatory terms of the improvement that had taken place in the curriculum of study at the Veterinary Colleges, but added that there were still great improvements needed both in the manner and method of teaching, in order to place within the reach of every student facilities for acquiring a thoroughly sound, practical, and theoretical education. He also expressed his opinion strongly that no young man ought to enter college without first serving an apprenticeship with a duly qualified veterinary surgeon.

In speaking of the court of examiners, he said that he hoped soon to see it composed entirely of veterinary surgeons ; and after passing a warm tribute of praise to the medical profession for their invaluable assistance, etc., during the period of our protracted infancy, he added that we would never develop the latent resources now lying dormant in our members until we throw open these sources to honourable distinction and ambition; for if these were thrown open, our best and most promising young men, after finishing their college education and obtaining their diplomas, would have some inducement held out to them to continue in that course of study and research which will be seen to bring its own reward, and raise both them and their profession in the estimation of the public. He was persuaded that there are no lack of members now, who, if the positions were thrown open to them, would, with six months' study, be able to fill the position of examiners in every branch of our professional education with distinction and credit, both to themselves and to the profession to which they have the honour to belong.

Commenting on the legal responsibilities of veterinary surgeons, and the risks they incur in the practice of their profession, he said that there was no calling or profession free from risks and responsibilities, and he did not think it desirable that there should be; but as a safeguard against any unfair treatment, he strongly recommended all to become members of the "National Veterinary Defence Society," whose powerful aid is ever at the disposal of its members in time of need, and whose veteran officers are always accessible when counsel and advice are required.

He concluded a very instructive address by exhorting the members to endeavour by their regular attendance, valuable contributions, and personal influence, to induce others to become members, and to render the meeting both interesting and profitable.

Mr. PETER TAYLOR, of Manchester, then read his paper on, "Is it advisable to apply Counter-irritation in Acute Disease of the Respiratory Organs?" The following is a copy of the paper :—

MR. PRESIDENT AND GENTLEMEN,—I have selected counter-irritation for our evening's consideration, knowing it to be a vexed and much-disputed subject with some of our practical veterinary surgeons, and also with our learned and scientific men. I thought that a night devoted to its consideration would be profitable, interesting, and instructive.

I had the privilege some years ago of hearing an essay read at Leeds, before the Yorkshire Veterinary Medical Society, by Professor Williams, on "The Effect of Counter-irritation in the Treatment of Bone-spavin," when the late Professor Spooner honoured the Society with his presence, and took an important part in that interesting discussion. I had the pleasure of taking a part in that discussion, and now having had thirty-six years of extensive public practice and close observation in my profession justifies me in reading this paper before you ; not that I am producing an elaborate and scientific thesis, my time being very short, since your respected President solicited my assistance.

I do assure you, by appearing before you in this position, I am, though

feebly, fulfilling the call of duty, and endeavouring to cement still closer the bonds of brotherly love and professional friendship.

The tendency of the present day is, I fear, to jump to conclusions upon insufficient practical observation and clinical experience. The most important part in a veterinary surgeon's education is undoubtedly to be gained in the sick-box, where every feature of disease can be watched and noted; and in order that the observation of disease may be profitable, it must be complete. Especially is the termination of a case instructive, and not the less so when the result is death; since we may then mark the way which the patient succumbed, and learn to guard against such an event in similar examples for the future.

If I were to believe in Professor Williams' treatment—as written in his work—in diseases of the respiratory organs, I should not have appeared before you in the position I do this night; though, at the same time, I am pleased to give unto him my warmest thanks for his great, meritorious, and noble works he has given to the veterinary profession, the result of much thought and great labour. I shall read you his remarks on Counter-irritation, so as to give you the most recent opinion of one of our ablest writers upon the effect of counter-irritation as applicable to the relief of acute inflammatory action upon the respiratory organs, before I open to you the result of my experience. (Mr. Taylor here read the extract referred to.)

Gentlemen, in all serious cases, let me impress upon you the necessity and great utility, and particularly in acute diseases of the pulmonary organs and their coverings, the first duty of a careful practitioner is to take an accurate, quiet, and collected observation of your suffering patient, so as to ascertain the structural form, the functional derangement, the peculiar symptoms, the painful or irritable countenance, the temperature by the thermometer, and the pulse, and make yourself acquainted whether your patient is a nervous and irritable one, or, on the other hand, is he a quiet, subdued, and plethoric one; and, in addition to all this, we must never lose sight of the fact that we are treating a living and a most vital complex organism, endowed with beautifully arranged and complicated nervous and circulatory systems. The latter organism is set into active motion at the birth of the animal, and continues in motion day and night, never ceasing one moment its action during the allotted period of its earthly existence. Interfere with this activity, and disease results; arrest it, and life ceases. How wonderful, how beautiful, are the works of the great and almighty Creator! in wisdom has He made them all, even to the tiniest insect.

Gentlemen, what mighty progress have these societies throughout our land given to our scientific advancement and our social status! Much has been done, much there is yet to do; therefore I implore you to be earnest, to watch, work, and do your duty to your society, and then you will individually advance your profession scientifically and practically, and endeavour to truthfully solve some of our complex problems which our most learned and scientific men have not as yet done for us. It is, I think, a disputed point and matter of opinion whether the primary cause of acute disease in the respiratory tract is a poison or an irritant impression made by the nervous centres, or whether it is from the imbibing of a diseased germ into the blood, or from some chemical or mechanical effect upon the organ or tissue affected, producing what is called inflammatory action or perverted nutrition. Whatever explanation may be given or accepted, how the diseased action is brought about in the respiratory organs, you are from your own observations and practical experience, I am sure, fully conversant with their manifold causes and symptoms.

I cannot allow the present opportunity to pass without adding my testimony to the great advance we have made in our improved methods of ascertaining

the progress or decline of diseased action by the unerring aid of that beautiful instrument, the thermometer, also by careful clinical instruction—in fact, gentlemen, our clinical aids in chest diseases may be said to be the pulse, respiration, its painfulness and quickness, and the temperature ascertained by the thermometer. All and each of these represent forces at work in the living body, all of which are now capable of being measured with great exactness. And such measurements show how closely such expenditure of forces is related to the *excreta* which represents the waste of tissues in health and disease.

The subject I have now in hand is, Is it advisable or advantageous to apply counter-irritation in acute disease in the respiratory organs? I should probably do more justice to this important consideration if I divided it under the following heads—viz., 1st, What is meant by the term counter-irritation? 2nd, How is counter-irritation believed to act? 3rd, If it acts as before mentioned, when and how should it be applied? 4th, When should it be abstained from, and why?

First, then, What is meant by the term counter-irritants? These may be defined to be remedies of external application, by which we endeavour to remove or diminish the morbid condition of a particular structure by artificially creating a new irritation or determination in some other part more or less remote from the seat of disease; but since in its most comprehensive meaning it would embrace too wide a field of physiological and pathological inquiry, and include the majority of those changes which are induced by such internal remedies as cathartics, diuretics, and diaphoretics, etc., therefore I have inserted the term of "external application," so as to define that the seat of irritation is transferred from an internal organ to the surface. The application of a counter-irritant for the relief of a labouring organ was doubtless suggested to the attentive observer by the occurrence of spontaneous translations of disease from one part to another, and by the obvious and immediate relief so frequently afforded by them, as, for example, in the subsidence of pulmonary and enteritic irritations on the appearance of Laminitis or a cutaneous eruption.

The object, then, of a counter-irritant is to produce a salutary change in an inaccessible organ by effecting an artifical change in one within our reach, and to transfer morbid action from a structure more immediately subservient to life to a less essential surface in sympathy with it.

In order to render such agents available in the cure of disease, much judgment and nice discrimination is necessary. In the hands of an inexperienced or rash practitioner, the evil might be aggravated rather than relieved. Various substances have been proposed at different times to produce counter-irritation, such as mustard, hot or boiling water, cantharides, ammonia, turpentine, preparations of iodine, setons, rowels, issues, strong acetic acid, actual or potential cautery.

I come now to the second part of my subject, viz., How is counter-irritation believed to act? I was instructed at my Alma Mater in the year 1842, and subsequently by that great and noble professor, the late Professor Dick, with very great force and emphasis, that two acute inflammations could not exist at the same time in a living animal, and by producing an external artificial inflammation you must of necessity relieve the internal morbid one. Our reasoning and clinical observation in the sick-box has materially modified this opinion. When counter-irritants operate so mildly as merely to excite the capillaries without occasioning any effusion of serum, they are called rubefacients, but if by increased strength or continued application they excite the extreme vessels into such a state of inflammation as to terminate in the effusion of a serous fluid and the elevation of the papillæ of the skin, forming what are called vesicles, which gradually enlarge and by their lateral ex-

tension soon coalesce, so that blebs of different size are produced. These vesicles are filled with a fluid rich in albumen, and generally contain some fibrine, or you may have a still higher grade of inflammatory action produced by the application of tartar emetic ointment, which is called a suppurant.

In acute inflammation of the organs of the chest, the counter-irritant I most chiefly rely on, or apply, is the best mustard mixed with tepid water ; in other words, mustard cataplasm ; when applied to the walls of the chest and breast it produces in a little time a sensation of pain, heat, redness, and swelling, the immediate effect as upon the peripheral extremities of the nervous system, and through them to the nervous centres, and from the nervous centres we have a reflex motor action, thereby increasing the action of the capillaries and the circulatory system on the surface upon which the counter irritant is applied. If counter irritation abstracts a large amount of nervous force, and causes a great determination of blood to the part upon which it is applied, combined—secondly, with large effusions of serum within the areolar tissue, we must I think, without the slightest doubt, relieve the vital organ or organs affected with morbid action. And that we do so, we know by careful observation and practice upon our suffering patients ; we see the acute pain modified or relieved, and the cough reduced, the pulse becomes more soft and lower, the breathing more tranquil, the temperature becomes gradually a little lower, and the secretions and excretions more regular and natural. In fact, gentlemen, the countenance and the healthy condition is resuming its normal and wonted standard, a condition which any of us always welcomes, and are delighted to see in our suffering patients. In Pleurisy, Pneumonia, or Pleuro-pneumonia, the application of mustard cataplasms should be applied over all the walls of the thorax, throat, and breast, the greater extent of surface of the skin which the mustard is applied to, the greater is its influence on the inflammatory action of the organs within. Thirdly : If it acts as before mentioned—when and how should it be applied. Well, to practically qualify this, I will relate a supposed case. A very expensive cart horse recently purchased, rising five years of age, has changed hands, thereby changed diet, stables, and his daily work and climate—he has during the last week improved very much in his condition : he is suddenly seized after dinner time, or in the morning with a rigor or shivering fit, pulse hard and quick, breathing quickened, temperature 104° fæces coated with mucus—Schneiderian and conjunctival membranes increased in redness. Auscultation may detect, according to the degree, whether the Pleuro or parenchyma is mostly affected. The friction sound in Pleurisy, a rustling or laboured action if it is Pneumonia. If my patient is admitted when the rigor is set in, my first duty, after a careful examination, is to administer a nerve stimulant such as *Ammonia carb.*, apply warm clothing to the skin, and give him as pure air as possible to breathe. In the space of some hours afterwards, the hot stage succeeds the cold, and after a certain space of time, my patient has a painful expression, dirty mouth, quick breathing, pulse hard and quick, exalted temperature and cannot cough. I immediately apply a thick mustard cataplasm over all the walls of the chest and breast ; over this I place thick paper ; repeat in ten or twelve hours, according to the symptoms of relief produced, or continue to re-apply if the vital and delicate organs within are not relieved ; and in fifteen minutes after the second mustard application I often apply a hot water blanket around the chest, and a mackintosh over the blanket. On the second, third, and perchance the fourth day, I may in severe cases apply this mustard cataplasm morning and evening.

Gentlemen, the medicine I most chiefly rely on is a draught composed of Belladonna, Spt. eth. nit., or Chloric ether, with Liq. ammonia acetatis—twice or three times a day, according to the urgency of the symptoms, etc.,

and I continue my treatment until the temperature is down to 101° pulse lower, mouth clean, secretions and excretions more normal, the appetite and countenance returned to a natural condition.

Fourthly: When should counter-irritation be abstained from? When the powers of life are ebbing, or when you have a weak pulse, blanched membranes, in all cases of Hæmorrhage, mulberry discharge from the nostrils, disintegrations of the pulmonary tissues, in eruptive fevers, or when you have an eruption of any kind on the skin.

In acute Laryngitis, when danger of suffocation is imminent, counter-irritation on the throat and breast, with Belladonna gargles and inhalations, are your sheet-anchors and your safe curative agents.

Gentlemen, we have yet much to investigate, much to learn, in order to overcome morbid action, and if I have awakened your attention and interest in reference to this important pathological and practical subject, I shall have given an impulse to the advance of our clinical observation. I have one request to make to you: receive what I have said in the love of truth; seek not to dispute, but to prove, to confirm, or correct my statements. It has taken some years of close observation and inquiry to give the advice upon counter-irritation that I have done to you this evening. Much! very much! remains to be done. I trust that I shall be assisted by you in the further prosecution of this important subject. Be careful how you observe in your clinical practice, and let those instructions be engraven upon your minds. *Fulness*, *accuracy*, and *probity* should be the legible characters written upon every case.

Gentlemen, our sick-boxes, our laboratories are always open, our resources are abundant and great; we, the scientific workmen, are never at rest; day and night our brains are endeavouring to unravel hidden problems; therefore in closing, I would say, continue faithfully to do your duty, and our profession will surely be advanced.

Mr. STORRAR said that he agreed in the main with the views so ably propounded by Mr. P. Taylor in his essay. He said that he had himself experienced much benefit from the application of a mustard cataplasm in attacks of Bronchitis, to which he was somewhat liable, and it was his general practice to apply a counter-irritant to the sides and chest in Pneumonia, Bronchitis and Laryngitis. He preferred mustard, and did not approve of severe applications of cantharides blister in such cases.

Mr. DACRE said that once he was a great advocate of counter-irritation in the treatment of chest affections, but he was now as strongly antagonistic to it. He did not apply mustard even in the first stages of such cases.

He said that if any one would carefully observe the symptoms exhibited by a pleuritic patient as he stands with an anxious painful expression—abdominal breathing, quick pulse, high temperature, and every manifestation of intense internal pain so characteristic of this disease, and then to order the application of two square yards of mustard to his sides as a remedy, he was gifted with a peculiar power of reasoning which he (Mr. Dacre) failed to appreciate. Some nervous horses would be almost driven to distraction by such a remedy. He maintained that in cases where mustard had been repeatedly applied, there was usually great prostration, and convalescence was very much retarded.

Mr. Dacre then related his experience of the effects of a blister which was applied to his own side for an acute attack of single pleurisy—how, notwithstanding that the blister acted well and was continued for twenty-four hours, it failed to give him any relief; but when the blister was removed, and hot water was applied, he felt relieved directly. His own practice in such cases was to administer a sedative internally, and apply soothing remedies externally, such as hot-water cloths, etc. After seven or eight days, when the

acute symptoms have subsided, he might apply a mild counter-irritant, but never during the early stages.

Mr. GREAVES said that they owed a deep debt of gratitude to Mr. P. Taylor for the able manner in which he had introduced the subject. The views he had propounded were very much milder then he (Mr. Greaves) had expected to hear. He thought, however, that the application of severe blisters to the sides in chest affections was not so much adopted now, even by the strongest advocates of the system, than it was formerly. He (Mr. Greaves) was taught it at college, and practised it for a considerable time afterwards, but he gradually came to adopt milder remedies ; and he had no reason to regret the change, as in his experience fewer cases died under the milder treatment than under the more heroic.

As an instance of the power that unassisted nature possesses when not interfered with, he related the history of eighteen cases of chest affection which he was treating homœopathically. The medicine was used up, he had no more in his pharmacy, and there were no means available at the time for replenishing his stock. So he refilled the bottles with cold water, and ordered its administration as before. The patients all recovered. He believed, with the late Mr. Haycock, that no disease was ever cured by medicine. He did not consider that counter-irritation was necessary or advantageous in such cases. In his own practice, when a horse came in blowing, and manifesting symptoms of congestion of the lungs, he administered a dose of Carbonate of Ammonia, gave him a bran mash, and turned his head to the door, and he was generally all right in the morning. In cases of sore throat, or affections of the mucous membrane, counter-irritation acted more beneficially than on serous membranes.

Mr. REYNOLDS expressed himself as very much gratified by hearing Mr. P. Taylor's paper, as he believed it to be the offspring of several conversations on the subject during their journeys to London together. He (Mr. Reynolds) did not think, however, that those typical cases which had been mentioned were so difficult to manage as the cases where the patient was seen to be off his food, dull and adynamic, generally going from bad to worse, until he died. He had no faith in the old theory, that two inflammations could not exist in the body at the same time. Still, in some cases where you are very anxious about your patient, you have a difficulty in keeping your hands off him—you feel as if you were, at least, *trying* to cure him. In Bronchitis and Laryngitis, the application of a counter-irritant gave relief, and in adynamic paralysis he would rouse his patient by a counter-irritant, but he considered it useless in Pneumonia or Pleurisy. He did not rely much on the readings of the thermometer in such cases, unless they conformed with the other symptoms.

Mr. HOPKINS said that the old practice of *bleed*, *purge*, and *blister* was fast dying out. He, however, disagreed with Mr. Greaves in the opinion that a cold atmosphere was more beneficial than a warm one in the treatment of chest affections in the horse. Of course there were varying degrees and stages of congestion, and in such cases as Mr. Greaves had referred to, when taken in their first stages, they all got well. But as a general principle in the treatment of congestion or inflammation of the lungs, a mean temperature and dry air was, in his opinion, by far the best, as the circulation of the blood goes on more readily in hot air than in cold. As to the thermometer not being reliable in such cases, the temperature indicated the fever, but the fever stage may pass, and the patient still die. You must distinguish between the fever and the inflammatory process. He believed that counter-irritation was beneficial in Bronchitis—when the larger tubes only were affected—Laryngitis, and Strangles, but not in Pneumonia or Pleurisy. His own practice in the latter cases was to apply hot water and hot rugs,

with the internal administration of Aconite, placing the animal in a warm box, with pure air.

Mr. A. LAWSON expressed himself in favour of counter-irritation being applied in chest affections, although he did not believe in the beneficial effect of repeating it three or four times in one day, until the sides were raw, as was sometimes recommended. In Laryngitis he would apply a counter-irritant once, twice, or thrice with discretion, and when the animal commences to feed you may then come in with your soothing applications. At one time during an epidemic he tried both modes of treatment among the omnibus-horses of Manchester : a certain number he treated by the internal administration of Carbonate of Ammonia, and the application of hot cloths, and the same number he treated by the internal administration of Carbonate of Ammonia, and applied counter-irritation externally. By the former treatment he lost a large percentage of his cases, but by the latter treatment he did not lose one ; he therefore considered it both good policy and sound reasoning to follow a practice that was successful,

Mr. WM. LEATHER said that he preferred hot cloths to irritants in the acute stages of chest affections, they gave a more uniform heat, etc. He put cloths around the body, and rubbed some mustard on to the front of the chest. In cases of acute congestion, he gave a stimulant and opened the box door ; he was of opinion that the reading of the thermometer was sometimes affected, when inserted in the rectum, if the latter was full of fæces.

Mr. T. TAYLOR declared that he was completely in a *fog* ; it would appear that the patient got better under any kind of treatment, and some died even under Mr. Greaves' mode of treatment. He contended that a great many animals must be killed by severe and repeated applications of counter-irritants to the chest in cases of Pneumonia, and nothing was more to be deprecated than the practice of trying to emblazon your coat of arms on a horse's sides. He agreed with others that the essayist had been much more modified in his ideas of counter-irritation than he had expected.

Mr. E. FAULKNER, after complimenting the essayist on the modified views expressed in his paper, said that he would like to know from Mr. T. Taylor if, during his long and extensive experience, he had observed any difference in the types and characters of chest affections ? In some cases of congestion, where the pulse at night might be 72, and the animal blowing, he would administer a stimulant and slightly irritate the sides, and he would be all right in the morning. Some cases might go on to Broncho-pneumonia, and require further treatment. To these he would apply soothing remedies, coupled to good nursing. He believed that *dabbling* practitioners hurried their patients down hill.

Mr. W. A. TAYLOR said that he held a very strong opinion in favour of counter-irritation properly applied. In congestive Pneumonia you have an arrest of the circulation of the blood and a paralysed condition of the vessels. It is to act as a stimulus to these vessels that he applied a counter-irritant. In his own case, when suffering from an attack of Bronchitis, associated with lung complications, the application of a blister gave him immediate relief from pain ; and if we can relieve pain by the application of a blister, we are certainly on the right track. But by repeated applications of counter-irritants you deplete your patients. Apply your counter-irritant during the crisis of the disease when it will have some effect, and do not be fiddling at it when your patient is dying.

In some cases of laryngeal and bronchial congestion, amounting in some cases almost to suffocation, the application of mustard gives great relief. He said that in those cases referred to by Mr. Reynolds, where the animal is off his food, dull, and adynamic, such cases are sometimes allowed to slumber because they do not manifest such acute symptoms as others ; but if

you insert the thermometer you will find the temperature high, and then is the time to administer your stimulant and apply your counter-irritant. He then related the history of three similar cases of inflammation of the lungs, etc., which occurred at one place. The first one was treated on the soothing, anti-irritant principle—viz., hot rugs, etc., and the administratio nof Belladonna and Ether. It died, however. The other two were treated by the application of mustard at once, and repeated in one of the cases twelve times ; both animals recovered, but he was convinced that the repeated blistering saved the last one.

Mr. WHITTLE said that he thoroughly endorsed the views on counter-irritation propunded by Mr. P.Taylor in his essay. Chest affections, he said, varied so ; in some you would have the mucous membranes principally affected, and in others the serous membranes would be the principal seat of the disease ; and as a consequence, our mode of treatment would require to be adapted to the peculiar type of disease present in each case.

Mr. WOODS said that he thoroughly agreed with the views of the essayist on this subject, and he had tried both modes of treatment.

About a year ago he had a great many cases of inflammation of the lungs, and very bad cases they were too. He put mustard on them immediately, and in some cases repeated it. His assistant was an advocate of the soothing-expectant treatment, and he declared that the patients would all die under such treatment as he was then adopting. But every one of them recovered. In one case, in the treatment of which he allowed his assistant to carry out his own plan for several days, the animal was getting so bad that he was afraid he would die ; in which opinion his assistant concurred, and they at once applied a blister, repeating it every day for three days: the animal ultimately recovered. In Laryngitis, he said he had great faith in the application of Croton Liniment ; it acts like a specific, producing a crop of pustules, but does not cause much external irritation.

Mr. W. A. TAYLOR suggested that the discussion of this subject should be adjourned, as it was evident from the diversity of ideas expressed upon it that further discussion upon it would be beneficial. This suggestion met with general assent from the members, and it was agreed that Mr. Morgan should open the discussion at the quarterly meeting to be held in August, as Professor Axe, of the R.V.C., London, had promised to open a discussion on "Contagious Diseases" at the next quarterly meeting.

A vote of thanks to the President closed the meeting.

DUNCAN HUTCHEON, *Hon. Sec.*

## NORTH OF ENGLAND VETERINARY MEDICAL ASSOCIATION.

THE quarterly meeting of this Association was held in the Douglas Hotel, Newcastle-on-Tyne, on February 27th, 1880. The President, Mr. D. Dudgeon, Sunderland, in the chair.

Letters were read from the Secretaries of the Liverpool and Lancashire Veterinary Medical Associations, with regard to representatives on the Council of the R.C.V.S. After considerable discussion, it was agreed that the members of the Association, while approving of the re-election of the six retiring members, do not, individually, bind themselves to vote for each.

Interesting cases were related by Messrs. Hedley, Mulvey, and Nisbet, and after remarks on them from several of the members, the discussion on Mr. Mulvey's paper (Injuries to the Coronet and Feet) was resumed ; each member relating a case on the subject, a very varied and profitable discussion followed.

The office-bearers for the ensuing year were elected, viz.:—Mr. D. Dudgeon, President ; Mr. W. J. Mulvey and Mr. H. Hunter, Vice-Presidents ; Mr. G. R. Dudgeon, Secretary and Treasurer.

A committee being elected to arrange for the annual meeting and dinner, to be held on the 28th May, at which Professor Pritchard will read a paper on "Some of the Contagious Diseases affecting Cart Horses," the meeting terminated. G. R. DUDGEON, *Hon. Sec.*

## ONTARIO VETERINARY MEDICAL ASSOCIATION.

THIS Association was established in Toronto, in September, 1874, and has been steadily increasing in the number of its members, and the interesting character of its meetings. The province of Ontario, owing to the success of its Veterinary College, through the energy and perseverance of its principal, Professor Smith, is now pretty well supplied with qualified veterinary surgeons—in fact, the old class of practitioners is fast dying out. At the last session of the Provincial Legislature, an Act to incorporate the Association was passed, several clauses in which cannot but be beneficial to practitioners, the clause requiring registration especially so. Any person falsely representing himself to be registered is liable to a heavy fine. There was an act already in existence, which is still in force, making it a finable offence for any person to usurp the title of veterinary surgeon, unless he be a graduate of some recognised college.

The annual meeting was held in the Veterinary College, Toronto, as usual, on December 19th, 1879.

Professor SMITH, the President, opened the meeting by a short address, congratulating the members on the continued interest they took in the meetings of the Association.

The minutes of the previous meeting, in April, were then read and confirmed.

The Secretary and Treasurer's reports were read and adopted, showing a continuous increase in membership, also showing the finances, notwithstanding the outlay lately incurred in procuring the Act of Incorporation, to be in a favourable state, there being still funds in hand.

Communications were then read, amongst which were letters from the departments of Agriculture of the United States and Canada, in reply to communications respecting the spread of contagious diseases of cattle.

A paper on "Castration" was read, with the view of eliciting the opinions and the experience of practitioners on the different methods adopted in performing that operation. On this a lengthened and animated discussion ensued, the actual cautery, torsion, the clams, both with and without the caustic, and the ecraseur, having each strenuous advocates, the majority appearing to favour the caustic clam.

At the close of the debate, Professor SMITH remarked he had performed the operation by all the methods mentioned, and would advise all who were successful in their own method not to change ; but he believed that ultimately the ecraseur would be the instrument that would come into most general use.

Mr. RUTHERFORD related a case of Tetanus, and the great benefit derived from the administration of bromide of potassium, believing it to produce anæmia of the cerebro-spinal system.

Mr. GRANGE related a case of Tetanus in the cow, yielding to treatment by belladonna. He also related an exceedingly urgent case of flatulent Colic, and the immediate relief and ultimate recovery resulting from puncturing.

Mr. GIBB and Mr. RUTHERFORD had also been successful with that operation.

Mr. GRANGE exhibited a plaster of Paris splint he had used in a fracture of the radius : the animal made a good recovery. He uses cheese-cloth,

putting the plaster on dry ; he first baking it, rolls it up, and dips it in water in which a little alum is dissolved.

Mr. CAESAR and Mr. GIBB had also used the plaster of Paris bandage with advantage.

Moved by Mr. CAESAR, seconded by Mr. NEAL, and carried, that the sum of twenty-five dols. be appropriated for a gold medal, to be competed for by the students of the Ontario Veterinary College at the next spring examinations.

Mr. Thomson was appointed to read a paper on Tuberculosis at the next meeting.

The election of officers for the ensuing year resulted as follows :—Mr. Wilson, of London, President ; Mr. J. S. Caesar, Cobourg, 1st Vice-President ; Mr. C. Elliott, St. Catharine's, 2nd Vice-President ; Mr. Sweetapple, Brooklyn, Secretary ; Mr. Cowan, Galt, Treasurer ; Directors—Messrs. Coleman, Duncan, Neal, Grange, Anderson, Standish, Rutherford, and Newton. Professor Smith was unanimously elected an honorary director.

Professor SMITH, on retiring from the chair, warmly thanked the members for his many re-elections. They had had many pleasant re-unions, and from the continued interest taken in the Association, he trusted and believed there were many more still before them.

## MONTREAL VETERINARY MEDICAL ASSOCIATION.

THIS Association held its fortnightly meeting on February 19th, the Honorary President, Mr. McEachran, F.R.C.V.S., occupying the chair. After the usual business, the Chairman presented to the library, on behalf of the author, a treatise on Laminitis, by Dr. A. Holcombe, of the New York Veterinary College. It was moved by Mr. B. D. Prince, and seconded by Mr. Wm. McEachran, that the thanks of the Association be tendered to that gentleman for his kind donation. Carried. Mr. F. Torrance, student, Montreal, described a case of Variola Equina, which is at present raging extensively among the horses in this city and neighbourhood. Mr. Torrance, in connection with his case, gave some interesting facts concerning the disease, which by some is considered to be the small-pox of man communicated to the horse. Others, again, say that it has no relation whatever to that scourge. It is to be hoped that Mr. Torrance will allow his paper to be published in the *American Veterinary Review*, as this disease, which of late years has become quite common in this country, has not received the notice it should from veterinary writers. Mr. N. P. Hinkley, Buffalo, N.Y., read a paper on Hygiene, or care of horses in health and disease. Mr. Wm. McEachran read a communication received from Dr. C. C. Lyford, Racine, which was very interesting. It was a case of Epithelioma in the nasal cavity of a horse. At the next meeting Mr. P. Cummings was to read a paper on Auscultation, and Mr. Wm. Jakeman will describe a case.

## ROYAL AGRICULTURAL SOCIETY.

AT the monthly Council held on March 3rd, the Hon. W. EGERTON reported the recommendation of the Committee, that for the future the Members' Veterinary Privileges should read as follows :—

### I.—*Visits of the Veterinary Inspector.*

1. Any member of the Society who may desire professional attendance and special advice in cases of disease among his cattle, sheep, or pigs, should apply to the Secretary of the Society, or to the Principal of the Royal

Veterinary College, and consulting veterinary surgeon, Camden Town, London, N.W.

2. The remuneration of the consulting veterinary surgeon or inspector will be £2 2s. each day, as a professional fee, and the charge for personal expenses, *when such have been incurred*, will in no case exceed one guinea per diem. He will also be allowed to charge the cost of travelling to and from the locality where his services may have been required. These charges may, however, in cases of serious or extensive outbreaks of contagious disease, be reduced or remitted altogether, so far as the members of the Society are concerned, at the discretion of the Council, on such step being recommended to them by the Veterinary Committee.

3. The inspector, on his return from visiting the diseased stock, will report to the member, and, through the Principal of the Royal Veterinary College, to the Committee, in writing, the results of his observations and proceedings, which report will be laid before the Council.

4. When contingencies arise to prevent a personal discharge of the duties, the consulting veterinary surgeon may, subject to the approval of the Committee, name some competent professional person to act in his stead, who shall receive the same rates of remuneration.

II.—*Consultations without Visit.*

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| Personal Consultation with Veterinary Inspector ... | 10s. 6d. |
| Consultation by Letter ... ... ... ... ... | 10s. 6d. |
| *Post-mortem* Examination, and Report thereon ... | 21s. 0d. |

A return of the number of applications from members of the Society during each half-year is required from the veterinary inspector.

III.—*Admission of Diseased Animals to the Royal Veterinary College, Camden Town, N.W.; Investigations and Reports.*

1. All members of the Society have the privilege of sending cattle, sheep, and pigs to the infirmary of the Royal Veterinary College, on the following terms:—viz., by paying for the keep and treatment of cattle, 10s. 6d. per week each animal; and for sheep and pigs, 3s. 6d. per week.

2. A detailed report of the cases of cattle, sheep, and pigs treated in the infirmary of the College or on farms in the occupation of members of the Society will be furnished to the Council quarterly; and also special reports from time to time on any matter of unusual interest which may come under the notice of the officers of the College.

The Committee also recommended that Professor Simonds be granted gratuitously a further supply of 200 copies of his paper on Sheep-rot. The Committee presented the following report from the examiners for the Society's prizes and medals for proficiency in cattle pathology:—

GENTLEMEN,—We have the honour to report that the examination for the prizes offered by the Royal Agricultural Society, took place on Thursday, the 22nd January, at the Islington Cattle Market, and the Royal College of Veterinary Surgeons, 10, Red Lion Square.

Six candidates were eligible for competition. Of these, one declined; one, in consequence of the regiment in which he holds his appointment having been removed from Aldershot to Leeds, did not receive his notice until too late; and one sent no reply.

Three presented themselves, and these having afforded proofs of their practical acquaintance with the subjects brought under their notice, we adjudicate the prizes in the following order:—First prize, William Alston Edgar, 1,000 marks; second prize, William Frank Smith, 875 marks; third prize, Nicholson Almond, 735 marks, out of a maximum of 1,200 marks.

It is a subject for great regret that the liberal inducements offered by the Royal Agricultural Society have not been more appreciated by the recent graduates of the veterinary profession. Possibly this may in some measure arise from the expenses occasioned by a journey to London, and we would therefore suggest that some allowance for travelling expenses might overcome the difficulty.

THOS. WALTON MAYER.
D. GRESSWELL.
WILLIAM DUGUID.

The Committee had received reports on Anthrax experiments from Dr. Burdon Sanderson and Dr. Greenfield, which they had recommended to the *Journal* Committee for immediate publication. They recommended that Mr. Arkwright be added to the Committee.

This report was adopted.

Mr. MARTIN said he should like to remark that an outbreak of Foot-and-mouth Disease was reported to the local authority at Ely the other day. The inspector reported to the Privy Council, and Mr. Duguid went down from the Veterinary Department. They were, however, quite at a loss to know how it had arisen. If the Veterinary Committee would place themselves in communication with Professor Brown, they might be able to obtain some information which would prove of value.

Mr. DENT asked Professor Simonds whether it was true that the same disease as Rot in sheep had attacked cattle, and even horses.

Mr. CHANDOS-POLE-GELL and Mr. NEVILLE said they had known instances of the disease in cattle.

Mr. RAWLENCE said that he had never before known a cow die of a Fluke Liver during forty-five years' management of estates in the West of England, but now the disease was extremely prevalent all over his district.

Colonel KINGSCOTE was sorry to say that he had heard of three young horses in his neighbourhood dying from the disease.

Professor SIMONDS said there was no doubt that, in consequence of the long-continued wet weather of last year, many cattle are affected, as well as sheep. He did not anticipate that aged cattle would suffer materially from the disease, because there were plenty of instances of animals sent to the butcher having flukes in the liver at the same time. Those which would suffer most were young cattle. With reference to horses, veterinarians very rarely found flukes in the liver of a horse; and he did not anticipate that there was any truth, practically considered, in horses being so affected. Of course, one could readily understand that, under the circumstances in which sheep and cattle had suffered so much, flukes might have entered into the liver of a horse; but it would be a new feature in veterinary pathology if they found horses dying in consequence of a large number of flukes in their liver.

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# Obituary.

THE Registrar reports the following deaths of members of the profession :—Mr. C. Turner, Croydon, who graduated in 1849; Mr. J. C. Plomley, who graduated in 1840; and Mr. C. Harris, Balham, who graduated in 1856.

The death is announced of M. Lecoq, at Menton, near Versailles. M. Lecoq was seventy-five years of age at his decease. He was at one time director of the veterinary schools of France, and an earnest student of veterinary science, which, by his many writings, he did so much to promote. One of his best-known books is his "*Traite de l'Exterieur du Cheval et des Principaux Animaux Domestiques*," the first edition of which appeared in 1843.

# Parliamentary Intelligence.

*House of Commons.—March 11th.*

## THE AFGHAN CAMPAIGN.

DR. CAMERON asked the Under-Secretary for India what was the extent of loss of baggage animals on the North-West Frontier of India between the opening of the Afghan campaign in November, 1878, and April, 1879. Mr. E. Stanhope : I believe that the number of camels which died or disappeared in the winter of 1878-9 was 31,000. We have not yet very complete information on the subject, but we know that full compensation was ordered to be paid on the spot for animals actually certified to have been killed by the enemy. As regards all others, the fullest inquiry possible under the circumstances was ordered to be made before the claim was submitted, the superintendent of transport and the commissariat officer noting on each claim, and giving an opinion as to the amount to be allowed.

*House of Commons.—March 15th.*

## GLANDERED HORSES IN LONDON.

Sir W. FRASER asked the Secretary of State for the Home Department whether his attention had been drawn to a statement made on the 3rd of March in the Kensington Vestry, to the effect that no less than 116 glandered horses had been slaughtered in that parish during the last six months ; whether he considered that efficient means were taken to ensure the burial of the whole body of each animal ; and whether he would cause inquiry to be made as to the spread of this disease. He added that from information subsequently received, he found that forty of the horses mentioned were affected in an adjoining parish, and he was also informed that the fat of these animals was sold for the manufacture of a compound known as "butterine." (Laughter.)

Lord G. HAMILTON, who was most imperfectly heard, was understood to say that the information supplied to him by the Head of the Veterinary Department was to the effect that there had been sixty cases of Glanders and fifty of Farcy. The method of disposing of the carcases was that they were taken to some place licensed by the Privy Council, after they had been disinfected, and were there disposed of by boiling. The general opinion in the Department was that the increase in the number of glandered horses did not arise from the spread of the disease, but in consequence of the greater activity which was displayed by the local authorities in detecting cases.

Mr. M. HENRY would like to know if it was possible to disinfect the body of a glandered horse. He considered it very doubtful.

Lord G. HAMILTON said the information he had given was on the authority of Professor Brown, the head of the Veterinary Department. He said the carcases were disinfected, and he presumed, therefore, that it was possible to do it.

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# Army Veterinary Department.

*Gazette*, March 2nd.

ROYAL ARTILLERY.—Veterinary Surgeon W. Boyd retires upon temporary half-pay (March 3rd).

*Gazette*, March 5th.

VETERINARY DEPARTMENT.—Veterinary Surgeon, First Class, C. Steel, from the 16th Lancers, to be Inspecting Veterinary Surgeon, vice W. Death, retired on half-pay ; G. Aitken, Gent., to be Veterinary Surgeon, on probation.

*Gazette*, March 12th.

VETERINARY DEPARTMENT.—Veterinary Surgeon, First Class, J. Baldock, from the 3rd Hussars, to be Veterinary Surgeon, First Class.

# Notes and News.

THE FAMINE IN IRELAND, AND HORSE-FLESH.—The *Abeille Médicale* of Paris, in alluding to the famine in Ireland, and the contributions towards relief made in all the churches in the French capital, remarks that it is not so much money as food that is needed, and asserts that in England and Ireland thousands of pounds of horse-flesh are lost while people are starving. Under these circumstances, is there not, it asks, a philanthropist who will attack the prejudice against hippophagy? The example of what has taken place at Paris, ought to open our eyes, it declares. During 1879, 10,281 horses, 529 asses, and 26 mules were killed for human food, and these yielded 2,067,850 kilogrammes of flesh, not including the heart, tongue, hair, liver, etc. In Paris, on the first day of this year there were no fewer than seventy-eight shops for the sale of horse-flesh. This excellent movement has been inaugurated by our very esteemed colleague, M. Decroix, ex-principal army veterinary surgeon, who makes this appeal in favour of the starving Irish people. It is much to be feared that many people in this country would rather perish than eat horse-flesh.

A NEW CATTLE DISEASE IN AUSTRALIA.—In the VETERINARY JOURNAL for September, 1879, Mr. Gordon, Chief Inspector of Stock in Queensland, describes a peculiar disease occurring among cattle in that colony, which, in one of its features at least, somewhat resembles *Emphysema infectiosum*. In June last, cattle imported from Queensland to Victoria were found to be affected with an unusual disease, the symptoms of which induced Mr. Graham Mitchell, F.R.C.V.S., to designate it "Yellow Fever." More than 100 cattle died, and Mr. Mitchell is of opinion that it was a form of bilious fever, of miasmatic origin, and indigenous to certain parts of Queensland.

CATTLE PLAGUE IN CHINA.—The *Times* correspondent at Shanghai, writing under date January 12th, states :—" At the present moment there is a violent cattle plague raging among the foreign dairies of Shanghai, and the public mind is much exercised as to whether there is or is not a general murrain among cattle. Of one fact there is no doubt, viz., that of fifty heifers in one shed belonging to a dairy-farmer here, forty-eight have died within the last ten days. China hides, being only half-cured, may carry infection, and the United States Consul here has informed his Government of the reported existence of a plague among cattle at Shanghai, in order that they may be forewarned, and take such steps as may seem good to them to prevent the importation of the hides of bullocks from this part of China."

MORTALITY AMONGST HORSES AT THE CAPE OF GOOD HOPE.—The Burghersdorp *Gazette*, published at the Cape, reports a serious mortality amongst some of the horses in that district. Mr. Olivier, a wealthy farmer near Burghersdorp, has recently lost between twenty and thirty horses. The horses show a lameness in one shoulder, and inflammation along the neck and side ensues. of which they die in a few days.

MULES IN MINNESOTA.—The *Times* Worthing correspondent says :—" Mules, although costing quite as much money, are preferred to horses ; they stand the heat and annoyance of flies better ; long days do not generally knock them up ; they are always ready for their food, which consists of a mixture of two-thirds oats and one-third Indian corn, and of this they have sixteen lbs. to eighteen lbs. daily, or nearly as much as they can eat. They do not use more than ten lbs. or fifteen lbs. of hay. Fly-nets are employed in hot weather. The flies being so troublesome in June, and the first fortnight in July, the mules paw and strike with their feet, and the ground being dry and hard, they are sometimes shod in front. At other times shoeing is unnecessary. The mules stand sixteen hands high, weigh 1,200 lbs. to 1,300 lbs., and cost about 120 dols. in Missouri, whence it takes about ten dols. to

bring them home. Several ox-teams are kept. They cost per pair, when ready broken at three years old, 120 dols. to 125 dols., and last four years. A man and his pair of mules can be hired at one-and-a-half dols. to two dols. per day, the hirer feeding the man and his beasts."

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# Correspondence, etc.

## PRELIMINARY OR TEST EXAMINATIONS.

*To the Editor of the* VETERINARY JOURNAL.

SIR,—Preliminary examinations are certainly one of the grievances which a student has to put up with. To him they seem quite unnecessary, for he considers, so long as he can satisfy the examiners at the Royal College of Veterinary Surgeons, that is all that should be required of him. Extra examinations, as "tests" assuredly are, should, to his mind, be dispensed with. On this subject I cannot do better than quote Mr. Gamgee's words, when announcing the abandonment of the system at Owen's College, Manchester. He says :—"After mature consideration, it has been decided by the Senate, with the sanction of the Council, that so-called 'test examinations' shall cease to be held in the medical school. These test examinations were examinations to which all students who were candidates for the primary examination of the Royal College of Surgeons were subjected, and which they were required to pass to the satisfaction of the professors of anatomy and physiology, as a condition to receiving such certificates as permitted of their presenting themselves before the Board of Examiners of the Royal College of Surgeons. In carrying out these test examinations, we had merely been conforming to the almost universal practice of the English medical schools—metropolitan as well as provincial—a practice which has been called into existence by the annual publication, by the Royal College of Surgeons, of returns showing the total number of students sent up by each medical school, with the percentage of successes and failures. A desire that these statistics should be as creditable as possible, has led the medical schools to institute these test examinations which, carried out with varying degrees of stringency, have been intended not merely to discourage indifferently-prepared candidates from presenting themselves for examination, but literally to prevent them doing so. This practice has appeared to the Senate and Council of Owen's College to be open to many objections. If a student has devoted himself with patience and assiduity to the curriculum imposed upon him by the examining boards, and has won a legal right to have his credentials signed, it appears hard that the signature should be refused because, upon being stringently examined, he is found to be an unsafe candidate. However desirable it may be to help a student to ascertain his fitness to pass any examination, and to advise him as to his best course, it appears undignified and unwise that advice should virtually become coercion. In abandoning compulsory test examinations, we do not, however, in the least desire to discontinue such examinations as will enable us to advise students as to their proper course in reference to the various public examinations. We shall, therefore, limit ourselves to advice, and in no sense take upon ourselves the functions which properly belong to the licensing bodies." "Nemo," who drew attention to test examinations in your Journal for February, brought his letter to a close by making an unwarrantable attack upon the private class system. In my opinion much benefit accrues to the student who joins the said classes, and their abandonment would be a decided loss to every one, but more especially to those students who were within a few months of presenting themselves for examination. How "Nemo" can expect that

"private classes" are to be included in a public prospectus, I am at a loss to imagine, and it is hardly legitimate to class a professional with a TRADE circular! How he gets at the twelve guineas extra per annum I cannot conceive; I should be glad if he would enumerate the items. He also seems to grumble at the educational fee. Surely he cannot expect to become enrolled as a member of any profession much under a sum of thirty-six guineas. Apologising, sir, for the length of this letter, and in bringing it to a close, allow me to subscribe myself "FIAT JUSTITIA."

Royal Veterinary College, 23*rd February*, 1880.

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## COUNTER-IRRITATION.

*To the Editor of the* VETERINARY JOURNAL.

SIR,—Since this subject was so ably introduced by Mr. Peter Taylor, of Manchester, before the Liverpool Association, I have given it a good deal of consideration, and wish to record my thoughts while they are fresh upon my mind. It is a subject I have always taken a deep interest in, and I have written several papers upon it, which are recorded in the journals. During my apprenticeship of six years, I clipped scores, probably hundreds, of horses' sides, to the extent of about sixteen or eighteen inches square over each side, and blistered them well with cantharides ointment, the blister being repeated for two or three days. In those days bleeding was always resorted to in Pneumonia and Pleurisy. I have seen many horses recover and many die under this treatment. Since my apprenticeship, about 1840, we had a good deal of Influenza prevailing, and some of the cases developed into Pneumonia: many died. I observed that nearly every one that was severely blistered died; as a consequence, blistering ceased to be a favourite remedy, and got into disuse. Bleeding, too, about this time was becoming discarded by many eminent practitioners, both in human and in veterinary medicine. I found my patients recovered in less time; the fever never ran so high, and I am quite satisfied my percentage of deaths is considerably less than it was when I resorted to blistering almost indiscriminately. I do not now use three pounds of mustard to the sides in twelve months.

I am quite aware that blistering, or what is called counter-irritation, is still practised by some eminent practitioners, some of my nearest and dearest friends, gentlemen whose judgment and intelligence I hold in the highest possible esteem. I am well assured that they hold their opinion conscientiously, it is the outcome of experience and habit; they have recourse to the application of mustard to the sides early in the attack, and estimate at a very high value the infiltration produced into the cellular membrane—the more the better. I have always failed to see sound reason in it. I once held these opinions, but have since then seen hundreds, probably thousands, of instances where disease in the lungs, accompanied with greatly accelerated breathing and quickened pulse, the attacks coming on in some cases suddenly and in others gradually and stealthily, has all subsided without the slightest counter-irritation to the sides. In some cases I do use a little stimulating liniment to the sides early in the complaint—I do it as the late Mr. John Lawson did it, viz., in the light of a diffusible stimulant, to rouse the dormant vital powers into action, cause the horse to move about, and disperse the congestion which seemed to be threatening the lungs. I am a full believer in this treatment, administering at the same time a diffusible stimulant internally, and rugs wrung out of half-scalding water over the thorax. I am of opinion—and I give this opinion deliberately, as the result of a pretty long and large experience—that where we have enormously swollen lobes of the lungs, heavy and consolidated, that counter-irritation, however severe and often applied, cannot possibly have any beneficial effect whatever upon it;

and in those cases where engorgement of the lungs has not taken place, where it is simply a loss of resciliency in the lungs, counter-irritation is quite unnecessary. Its tendency is to make a horse feel ill, and to be ill, and to cause an accelerated pulse, increase of fever, and prostration ; it has a mysterious action upon the nervous system, and through it disarranging the sensitive and delicate functions of every organ.

I look upon a horse suffering under a painful disease, just as the late Mr. John Lawson did when he said, "The horse is a 'funky' animal ; he soon gives up ; he cannot stand much suffering." I believe severe extensive blistering produces, in the first place, a shock to the whole system, especially to the nervous system ; then the pain, suffering, and torture he endures reduces his vitality : it exhausts him of his physical energy, and seems to rob him of his very life, and oftentimes contributes materially to increase the degree of fever, and affects the whole system, produces a state of sinking, often accelerates a fatal termination.

I remember being called in by a friend of mine, a veterinary surgeon ; he was laid up in bed by a severe cold. He said, "I have been up three days and nights with my horse ; I do not think you can do him any good, I think he is sure to die—but do what you can for him : he is a high-priced horse." I found that counter-irritation had been employed extensively and severely, the skin and hair all sloughing off to a considerable extent on both sides ; setons over ribs on both sides and breast ; blowing, and pulse ninety-six ; loathing all food. The opinion I formed was that there was greater disease externally than internally : this kept up the pulse and every bad symptom. I at once removed all setons ; gently cleaned off as much as possible all irritation ; the patient was relieved, the pulse and every bad symptom presently subsided, and the case recovered. I have no hesitation whatever in saying, that had the former treatment been continued a little longer, the horse must inevitably have succumbed. I am not for one moment questioning the fact that there are some unhealthy subjects, with bad stamina in them, or some chronic disease on them, and if they become attacked, the disease will go on from bad to worse until they die, whether we use counter-irritation or not ; nor need we be surprised at this, for are we not told that "two men shall be labouring in the field, one shall be taken and the other left ; two women shall be grinding at the mill, one shall be taken and the other left" ? But what I maintain is this, that we give nature a much better chance to weather the storm, and recruit her shattered energies, if we save her the torture of adding to her sufferings, which must inevitably accompany severe extensive counter-irritation—never forgetting this great truth, that in our struggle for existence the practitioner who has the least percentage of recoveries is likely to go to the wall, and *vice versâ*.

*Cool Air or Warm Air for Pneumonia, or Congestion of the Lungs.*—Mr. Hopkins ably advocated warm dry air in cases of Pneumonia in the horse. No man living has greater reason to believe in warm dry air than I have : it has saved my life over and over again, in sudden attacks of extreme difficulty of breathing, when I could scarcely inhale a thimbleful of air into my lungs ; when I have had to place my mouth close to the fire, so as to inhale the heated rarified air. In a few minutes my lungs would relax, and in half-an-hour I could breathe with ease and freedom. I have thought, by parity of reasoning, that my horse-patient must be benefited in like manner. I have, on more than one occasion, taken my patient when suffering from congestion of the lungs in its earliest stage, into a saddle-house in which was a hot fire, and in which place a fire had been burning for weeks day and night, the air as dry as it could possibly be. I have tied my patient's head within three-and-a-half yards of the fire for three days and nights. I carefully noted the number of respirations and pulsa-

tions before he went in, and several times a day while in this place, but he did not experience the slightest benefit from it. I have placed other patients suffering from confirmed Pneumonia in this place, and with like results. The conclusion I have come to is, that warm air is not suited to the constitution of the horse when affected with either Pneumonia, congestion of the lungs, or Bronchitis. I am in favour of fires in stables during wet, damp seasons: it has a beneficial effect in keeping stables healthy; but my experience in hundreds and hundreds of cases is that cool air is natural to the horse, and whenever the air-passages are in an irritable state, whether the result of congestion, spasmodic action, inability in the lung-tissue, or loss of resiliency, or Pneumonia—that breathing cold air is the finest sedative we can employ, it goes direct upon the tissues affected. Cold air contains more oxygen than warm air does, it oxygenates and revivifies the blood more effectually; the legs and whole system keep warm—yes, tie the horse's head to the open door, instead of allowing him to get his head stuck in a corner and be breathing the same air over and over again: the practitioner who does not adopt this method is depriving his patient of that which has an influence for good greater than all his other remedies put together. On this point I have fully convinced myself; but on the question of counter-irritation, I do not pretend to solve that problem. We see plenty of horses die when this system is adopted, and they die also when it is omitted. Are we not told that man is born to die as the sparks fly upwards? Yes, we must leave it, leave it to Him to whom "a thousand years are but as one day, and one day as a thousand years."

Yours obediently,

Knott Mill, Manchester.
*February 14th*, 1880.

THOMAS GREAVES, F.R.C.V.S.

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## "INDIAN PAY AND ALLOWANCES."

*To the Editor of the* VETERINARY JOURNAL.

SIR,—In your report of the new pay regulations for the Indian Veterinary Department, you mention that there is an allowance of sixty rupees for forage for two horses. When such is the case, I ask why a veterinary surgeon, going from one station to another, is only allowed to take one horse at the public expense? I was a sufferer in this way during the late Cabul campaign. After having gone to the expense of a second horse, I had to leave it behind, as I was refused carriage. When doctors attached to cavalry and horse artillery draw forage for four horses, and are allowed carriage for at least three, I think that such an injustice to our department should be at once done away with.

Yours truly,

"A SUFFERER."

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## THE RESPONSIBILITIES OF VETERINARY SURGEONS.

*To the Editor of the* VETERINARY JOURNAL.

SIR,—I have been somewhat grieved to observe that your journal has been made the channel for indulgence in *personalities*. Under the above title much interesting and, may I say, valuable discussion might have arisen; but well-thinking members shrink from the debate for fear that they may ensnare themselves inadvertently. Discussion, to be profitable, must be void of all offence; but with us this matter has been thought unimportant, as the pages of your *contemporary*, in years gone by, will show. But ere I say more, I think I had better observe that I am not "une de la fatuité qui décide, qui fronde, parle bien de lui-même, et mal de tout le monde," neither do I profess to possess "tout le savoir obscur de la pédanterie." I therefore

shall not enter the discussion as it exists, but make a few passing comments on *responsibilities*.

It occurs to me that, as a body, we are as ignorant of our responsibilities as new-born babes. Firstly, our "responsibilities" to ourselves; secondly, to our profession; thirdly, to the individual members thereof; and fourthly, to our clients and the public. These questions are not to be answered by us collectively, I regret to say, but individually; and our opinions being so diversified, I fear they never will be answered collectively. To our professional disadvantage (upon my word, I began to write disgrace), we are such a divided lot that no philosopher will attempt to determine the existence of our "Vis unita fortior." The very motto falsely describes us, and the public, seeing this, hesitates to receive us. Much must be done to purge the "body corporate," before we enter into a discussion on *professional morality*. To do so now would be to do so under empirical laws, and nothing but unverified inductions would be adduced; therefore it behoves us to so improve ourselves individually, that eventually we may "collectively" represent a body corporate to the public eye, under the banner of "Vis unita fortior," in all sincerity and truth. Many young members despair of being able to accept responsibilities—they should bear in mind the success achieved by a Chatterton, an Erasmus, and others. Of Erasmus we are told he laboured under no small disadvantages of birth and education. Depressed by poverty, friendless and unsupported, or but very slenderly supported indeed, he made his way through all these obstacles, and, by the help of bright parts and "constant application," became one of the most considerable scholars of his age, and acquired the favour and protection of princes, nobles, and prelates of the greatest names in Church and State.

Until we do, by "constant application," acquire that knowledge which yields *common-sense*, we shall have constant evidence of professional meanness and ill-manners. Nothing else can emanate; therefore let us, who have *light*, shine on one another to edification, and thus draw those in darkness to be led by us into the realms of light, and not with reproof, but with pity meet them. If our rays of intelligence excel another, we should not glory therein, or affect ornament on any such topic as this under discussion; to do so is puerile. These lines of Cicero will explain:—

"Istiusmodi res dicere ornatè velle, puerilo est, planè autem et perspicuè expedire docti et intelligentis viri."

To conclude, let it be remembered that it is said, "To have learned the liberal arts *faithfully*, softens the manners, and operates as a fine corrector of ill-nature, envy, and anger." The original lines (Horace's) run thus:—

"Ingenuas didiciffe fideliter artes,
Emollit mores,
Asperitatis et invidiæ corrector et iræ."

May all monstrous sweeping accusations cease from this time, and moderation abound, both in our intercourse with each other and writings, and in time the public will accept those of us who dare assume to be, and are *de facto*, civilised savages not destitute of moral sense.

Savage Yard, *March 11th*. "La Belle Sauvage."

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*To the Editor of the* Veterinary Journal.

Sir,—Mr. Fraser's first cry was that in the veterinary world, "from Dan to Beersheba, all was barren;" but in his second letter, as it appeared in the March number of your Journal, he makes so many concessions that we may soon expect him to be one of our warmest friends. He is now so kind as to admit that he knows many presentable and respectable veterinary surgeons,

and he is content to conclude his effusion by advising us to study the writngs of "George Eliot," specially singling out from "Middlemarch," "Mr. Bulstrode" and "Mr. Horrock the Vet." Poor Horrock being little mentioned, and being besides of a taciturn disposition, cannot afford much profitable study; in fact, he takes scarcely any action in the work, except to quietly ride along and say and do nothing to injure any one. Furthermore, we are not informed, harmless as he is, whether he is a M.R.C.V.S. or merely one of those black sheep who practise without a diploma, and whom we seek by a penal clause to exclude from assuming the title of veterinary surgeon. It may be advisable to study Mr. Bulstrode to *avoid* imitating him, but otherwise it is difficult to see what profit can arise from dissecting his character. "George Eliot," being a lady, cannot be supposed to know much about the horse world, and yet she does not rail at the profession like Mr. Fraser, although she is not aware of its great and gratifying progress. How should she be? He has in his last communication prominently alluded to me as "our classical friend from the North," because I commended to him the study of the character of Thersites as depicted by Homer; but I am afraid he has not yet thoroughly comprehended it. To his denunciation of the professors I do not answer, because they are well able to take care of themselves. He gives us some interesting details of his own private life, and states he has lived in three different parts of England, and was not appreciated through prejudice against his profession. Has it never struck him that the cause of this rested in himself? I know, socially speaking, my experience is just the reverse; and I firmly believe in the saying (as old as Lord Bacon), "That the member of any profession makes his own position." As this is the last letter I shall trouble you with on this subject, I wish to tell Mr. Fraser that it is a golden rule to do unto others as we would they should do unto us. Let us at least be charitable in our judgments.

Your obedient servant,

"A Veterinary Surgeon."

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## ARMY VETERINARY SURGEONS AND REWARDS FOR SERVICE.

*To the Editor of the* Veterinary Journal.

Dear Sir,—I always understood that veterinary surgeons, from the commencement, were *commissioned* officers, ranking as lieutenant, captain, major, and colonel. I feel certain it was so in my time, and surely the service is not retrograde. The error appears to be that this fact was overlooked when the promoted *non*-commissioned officers' good-service pension was tendered Inspecting V.S. Gudgin. Mention this to the Commander-in-chief. I am sure it will be rectified. It is a mistake altogether. I remember His Royal Highness dining with us after the Crimean war, and the eulogistic terms he employed when speaking of us in his "after-dinner speech," still ring in my ears. No! the insult to the Veterinary Department is not intentional, take my word for it, and time will prove I am right.

Yours obediently,

London, W., *March 12th*, 1880. "An Old Comrade."

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## VETERINARY TITLES AND THE ARMY VETERINARY DEPARTMENT.

*To the Editor of the* Veterinary Journal.

Sir,—The letters mentioned in the letter signed "Cygnus" in your last number, I presume mean Fellow of the Veterinary Medical Association, London, which has been connected with the Camden Town Veterinary

School for a number of years, and which title can only be obtained under certain regulations.

I am much pleased with your remarks on the Army Veterinary Department and the Zulu War; but what is wanted is the recognition of the veterinary profession by the Queen in Council, and if this was taken up by the President and Council of the R.C.V.S., and their wishes expressed in a petition to Her Most Gracious Majesty, and properly presented, all cause of complaint would, I think, be removed.

Believe me, yours faithfully,

THOMAS WALTON MAYER,
*Professor of Veterinary Surgery at the*
*March 4th*, 1880. *Agricultural College, Cirencester.*

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*To the Editor of the* VETERINARY JOURNAL.

DEAR MR. EDITOR,—In reply to the question asked by your correspondent, "Cygnus," in this month's issue of your interesting and ever-welcome Journal, permit me to ask for space to inform him that the initials, F.V.M.A.L., mean that the gentleman making use of them is a Fellow of the London Veterinary Medical Association, and like your humble servant, holds a proper certificate duly signed by two of the professors of the Veterinary College, whereby he is authorised to use the aforesaid initials after his title of M.R.C.V.S., whenever he pleases.

I am, dear Mr. Editor, faithfully yours,

Kingston-on-Thames, *March 3rd*, 1880. WM. FURNIVALL.

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## "FALSE PLUMES," AND "PENAL CLAUSE."

*To the Editor of the* VETERINARY JOURNAL.

SIR,—I cannot help thinking our profession needs searching reform before we dare to seek a penal clause; and as you have proved yourself to be the leading veterinary reformer of modern times, in every particular, I will assist you to give *exposure* to the factors of quackery; and I am certain you will do your part nobly, as you have done in "honest competition." Well, sir, to begin, let me ask: "Where do the quacks qualify for quackery?" Why, with our big metropolitan "vets.," as *running doctors*. These men are generally blacksmiths or grooms, who are entrusted by these *magnificos* to visit, bleed, purge, drench, and "back-rake." Most emphatically I assert that this "running doctor" business is a *burning disgrace* to our profession, and I do hope you will begin a thorough exposure at once. These running doctors *drink*, as well as give *drink*, and no doubt keep *business going* with the grooms and stablemen. They are, not unfrequently, entrusted to attend cases entirely, our grand practitioner never seeing the patient at all; so John Clyster, the "running doctor," has sole *possession* of the stableman's confidence. After a few years John has a kick-up with the "governor," gives up the *shop*, as he calls it, and, as he has done all the "governor's" work for so many years, he commences business on his own "hook," dubbing himself "Veterinary Surgeon," "late manager, assistant, or foreman to Mr. Eurytus Centaur, M.R.C.V.S." It is a burning disgrace to us that such men should be permitted to represent the masters as they do—the system must be exposed.

Let our young graduates buckle to and fill their place; for, without the apprenticeship clause, they know little of practical duties, fresh as they are from college study; and here is a means to an end much to be desired.

I have never employed a "running doctor," because I knew it was the most prolific source of *quackery*, and I have always found my young men

from college most anxious to assist and faithful to their duty. So I will not listen to our *grand practitioners'* excuses: "These young gentlemen won't and can't do the dirty work," etc. Bosh! I say. Assist, Mr. Editor, to raise the profession by putting down the quack factory. Blush at my remarks? Well you may. I blush that I have not written to you about this disgraceful business before.

Now, Mr. Editor, speak out. I know you will, and shame them into that about which your two correspondents, Messrs. Fraser and Lambert, differ so much—"morality." Ever yours obediently

London, *March 12th*, 1880. "AN OLD LONDON PRACTITIONER."

[There can be no doubt whatever that this "running doctor" system is a source of serious injury to the profession, and one of the most fruitful causes of quackery. Several instances occur to our mind in which these men are now practising as "veterinary surgeons." The profession should at once discountenance the "running doctor" system of conducting practice. It is bad and pernicious.]

## THE DISEASES OF SHEEP.

*To the Editor of the* VETERINARY JOURNAL.

SIR,—A letter appears in the Journal for the present month reflecting discredit on some of our veterinary teachers, that they have discarded granting the requisite and necessary attention which should be devoted to the diseases of sheep in their lectures to their pupils I am a M.R.C.V.S., and graduated a few years ago in Edinburgh, having passed my period of study at the Dick College, and most positively say that, during my course of study, the utmost care was taken by the Professor of Cattle Pathology (Professor Walley) to explain clearly, theoretically, and demonstrate practically, the causes, symptoms, treatment, and *post-mortem* appearances of the various diseases affecting sheep, and have been present many times when he has exhibited to his class the livers of sheep affected with Rot, with a clear exposition of the causes, etc., relative thereto.

I am in a position to substantiate the above statements, not only by reference to fellow-students, but also by reference to notes taken by myself at the time. Special attention was also devoted to the important subject of "*diet*."

I enclose my card, and trusting you will find space for, and be agreeable to insert, this in your next issue,

I have the honour to be, sir,

*March 14th.* Your obedient servant,

"ZULU."

## "PATHOLOGY," "ANATOMY," AND "PROFESSORSHIP."

*To the Editor of the* VETERINARY JOURNAL.

DEAR SIR,—The advertisement soliciting candidates to apply for the vacant chair at the R.V.C. has certainly puzzled me, as well as several of my medical friends; and it occurs to me, that with many other matters in the Institution, there is also much need of reform in the duties pertaining to the professorial chairs.

"Wanted, a Professor of *Pathology* and *Anatomy*."

Now it is *multum in parvo* here. The pathologist must also be the anatomist. Can we select two branches of our studies so diametrically opposed to each other? I think not. Then why on earth unite the two? A *sound* pathologist is a practitioner who, in the broad field of practical research, has reduced scientific hypothesis to sound reasoning facts—something more than *conjecture*. A *sound* anatomist is one who has reduced his

scientific research to the narrow field of the dissecting-room, although that field yields wide expanse for thought and wonderment at the mysterious animal mechanism displayed by the Great Architect.

Each field of study and research is, to my view, a separate enclosure, and worth a life's study ; therefore I take it that a professor, to grasp pathology and anatomy in a really scientific institute, will be a *lusus naturæ*, if the sense (*scientific*) be strictly adhered to. I feel it to be a duty incumbent on me to draw the attention of the profession to the matter ; and if the body follow my views, the Governors may soon be led to see how erroneous the jumbling up together of two distinct and separate courses of study by them has been remarked by the profession. If, on the other hand, Mr. Editor, you think my *argumentum ad judicium* should not be issued, kindly find room for it in your waste-paper basket, and believe me to be

Yours,

London, *March 12th.* ROBERT WARD, F.R.C.V.S.

## CALCULUS IN THE RECTUM OF A PONY.

*To the Editor of the* VETERINARY JOURNAL.

DEAR SIR,—I have to-day forwarded you a calculus which was taken from a pony that was under my treatment yesterday. I do not know anything further about the case, than that I was called in on the 1st inst. to see the animal, as it was unwell. Considering it to be a case of obstinate constipation of the bowels, I treated it accordingly. Unfortunately, it was sold to a knacker, who opened it previous to my arrival in the evening. However, I succeeded in securing the calculus forwarded.

During twenty years' practice I have not met with a similar case. From what I can gather, the calculus was found in the intestine, as the man says, "close under the kidneys." I therefore conclude that it was in the rectum. I am of opinion that it had been present in the large intestines for a considerable time, and being at last forced into the rectum, where, on account of its volume, it could not pass on, it caused obstruction. The questions then arise—What was the origin of the calculus ? How long was it in forming ? And what is its composition ?

The animal was employed by a small farmer, and had previously been a carrier's pony ; but owing to bad temper it was sold to the last owner. I have understood that these concretions are frequent among millers' horses.

Should you consider the specimen of interest, I shall be glad to hear your account of it in next month's VETERINARY JOURNAL.

Yours obediently,

Royston, *March 3rd.* THOS. R. SCRUBY, M.R.C.V.S.

[The specimen sent is not a concretion, but an intestinal calculus, somewhat spherical in shape, about five inches in diameter, and weighs about two pounds. It has the ordinary characteristics of an ammonia-magnesian phosphatic enterolith, and we think our correspondent is quite right in his supposition, that it had left its original bed, was carried into the rectum, where it became fixed, and so produced obstruction of the bowel.

The mode of formation of enteroliths is now pretty well known. The mineral matters which enter into their formation are derived from the food upon which the animals are fed, and especially the coarse meal and husks of cereals. The salts themselves are not very soluble, and occur in the intestine in a state of saturation, in which condition they are readily deposited around any foreign body—as a pebble, small bit of metal, etc., which serves as a base or axis of crystallisation ; or they may be formed by the mutual reaction of the soluble phosphates and the ammonia salts. We have not made a section of the calculus, so cannot venture to give an opinion as to its age.]

## A HAIRLESS CALF.

*To the Editor of the* VETERINARY JOURNAL.

SIR,—In the early part of February, I was shown a heifer calf, the property of Mr. W. Bell, of Stanion, a village near here. At the time I saw it, the animal was about a fortnight old, and with the exception of a small tuft at the end of the tail, there was not a hair to be found on the body, the skin being as smooth and soft as a baby's. On inquiry, I found that the cow (a well-bred animal) had calved at her proper time, and that the sire was a pure-bred shorthorn bull. I advised the owner to clothe the calf, as it appeared to be suffering from the cold, although in other respects well and hearty.

Whether it did succumb through cold or not, I am unable to say, but I was told it only lived about a week after I saw it.

Under what order would such a monstrosity be classed, if monstrosity it can be termed? I am, sir, yours obediently,

Kettering, *March 6th*, 1880. T. H. MERRICK, M.R.C.V.S.

[An animal suffering from congenital Alopecia cannot be designated a "monstrosity." An apparent absence of hair at birth is not extremely rare, and this absence may even continue through life. Hairless horses now and again figure at fairs. Sometimes the Alopecia is accidental, and due to temporary or permanent disturbance in the hair-follicle. When congenital and permanent, the hair-follicles are either absent, or so undeveloped that they cannot grow the hair. The absence of hair need not have caused the death of the calf. A similar case to that of our correspondent, is described in the *Recueil de Méd. Vétérinaire* for February 29th. The calf is alive.]

## TO CORRESPONDENTS.

A NUMBER of communications and letters are unavoidably held over until next month.

CONSIDERING the demands on our space, we again beg Secretaries of Veterinary Medical Societies to condense their reports as much as may be compatible with the interest of their proceedings.

## Communications, Books, Journals, etc., Received.

COMMUNICATIONS have been received from C. H. Sweetapple, Brooklyn, U.S.A.; J. D. Overed, Blofield; J. W. Hill, Wolverhampton; T. Greaves, Manchester; J. H. Steel, London; T. R. Scruby, Royston; G. Mitchell, Melbourne; Professor Walley, Edinburgh; F. F. Collins, Simla; W. H. Coates, London; A. Gunn, Beauly; A. H. Santy, Norwich; R. Moore, Army Veterinary Department, Pretoria; L. Butters, Norwich; C. Whitworth, London; T. W. Mayer, Cirencester; T. H. Merrick, Kettering; "An Old London Practitioner"; J. H. Cox, A.V.D., India; "Pferd"; "La Belle Sauvage"; "A Sufferer"; H. J. Cartwright, Wolverhampton; S. Locke, Manchester; "Zulu"; "A Veterinary Surgeon"; T. H. Prior, Parsonstown; G. Kidney, Dublin.

BOOKS AND PAMPHLETS: *A. H. Holcombe*, A Contribution to Veterinary Pathology, Laminitis; *M. E. Decroix*, L'Hippophagie et les Viandes Insalubres; *W. Fricker*, Chirurgisches Vademecum für Thierärzte und Studirende.

JOURNALS, ETC.: *Wochenschrift für Thierheilkunde; Archives Vétérinaires; Journal of National Agricultural Society of Melbourne; Chicago National Live Stock Journal; Lancet; Farmer; British Medical Journal; Oesterreichische Vierteljahresschrift für Wissenschaftliche Veterinärkunde; Recueil de Méd. Vétérinaire; L'Echo Vétérinaire; Animal World; Mark Lane Express; Agricultural Gazette; Army and Navy Gazette; Medical Press and Circular; Der Thierarzt; Revue Vétérinaire; Il Medico Veterinario; Annales de Méd. Vétérinaire; Deutsche Zeitzschrift für Thiermedicin; American Veterinary Review.*

NEWSPAPERS: *Toronto Evening Globe; Paper and Print; Stockport Advertiser; Irish Times; Cyprus; Montreal Daily Star; Montreal Gazette; Scotsman.*

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AND

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# TUBERCULOSIS FROM A SANITARY AND PATHOLOGICAL POINT OF VIEW.*

BY GEORGE FLEMING, F.R.C.V.S., ARMY VETERINARY INSPECTOR.

IT cannot be denied that while medical science is combating, with some degree of success, many diseases which have long been a scourge to mankind and animals, and finds the prospect of complete victory more in the way of prevention than of cure, other maladies spring up; and while they assume a more or less serious aspect, they have to be struggled with anew, and their remedy discovered in their cause. The disorders which disturb or imperil human or animal life are hydra-headed, and the skill and ingenuity of man are strained to the utmost, in order to keep up the incessant warfare against them. This warfare would be hopeless, and the enlightenment of the medical warrior of no avail, were his weapons nothing more than those to be found in the armamentary of the pharmacopæia, as was the case in bygone centuries, or if he made his attack direct with drugs, charms, and incantations. Medical science of the present day is tactical and strategical, and it seeks, above all, to know the whereabouts of the enemy, his strength, mode of aggression, and method of destruction, before it begins to cope with him. To discover the cause of disease is a grand object in medicine, and especially with regard to those maladies whose course is so insidious, rapid,

* Read at the meeting of the Norfolk and Eastern Counties Veterinary Medical Association on February 4th.

or destructive, that all attempts at remedying them are futile. Hence it is that, in recent times, far more attention has been devoted to the pathology of disease, and particularly to causation, than formerly. To this end, the accessory sciences have been largely drawn upon, to aid in the necessary investigations, and the services they have already rendered are great, but probably only a small instalment of those yet to be obtained. But of far more importance, perhaps, than this, in the inquiry into the nature of some infectious and contagious maladies, and their results when transferred to different species of animals, is experimental pathology, a creation of modern days, and one which is destined to play a leading part in all pathological investigations. This new branch of medical research, helped by the accessory aids, has already thrown a flood of light on what was before obscure, while it has revealed most startling facts which were never suspected, and which places it in the power of man to understand the manner in which morbid processes are set up and extended, to avert them, or to remedy their effects.

The discoveries made in this direction, though they have revealed hidden dangers, which were all the more formidable because hitherto undreamt of, have, nevertheless, not always been of a very gratifying or comforting kind; and one is often inclined to think that ignorance would be more blissful than the knowledge of the existence of such dangers, which surround us and meet us wherever we go, whatever we eat or drink, or come in contact with. Nervous people decline to know the whole truth, and are ready to confess that life is not worth retaining at the cost of perpetual dread and alarm, amid what should be the enjoyments of this world.

But the medical philosopher has no such dread or squeamishness; he ever sees before him the misery, agony, and loss caused by disease, and witnesses holocausts of his fellow-creatures, or useful animals, carried off prematurely by disorders whose ravages he cannot check or control, but whose onset he feels he should be able to prevent. To seek out means of prevention, and to thoroughly investigate the influences which lead to the production and perpetuation of disease, whether in man or beast, is a far higher, nobler, and more satisfactory task, than attempt-

ing to discover cures—it is the special and sacred duty of the sanitarian, no less than of the pathologist.

Whether diseases in the human and animal species are on the increase or not, or whether closer observation and more intelligent and wider investigation have discovered the existence of maladies which were present, but not defined or suspected, is a question which I will not now discuss; but the one disease I am about to bring to notice, though possibly affecting bovine animals for a very long time, yet has only recently started into prominence, and is receiving great and deserved attention, though not in this country, I fear. I allude to Tuberculosis.

For many years my attention had been particularly drawn to the greater frequency of this malady among cattle, as was evidenced by the reports of not only veterinary surgeons who had occasion to observe it, but also of stockowners and butchers. My acquaintance with what was going on in veterinary science on the Continent, led me still further to inquire into this progressively extending disease. Villemin had, experimentally, demonstrated the inoculability of human tubercle, and continental veterinarians—notably Chauveau, Gerlach, and Colin—aware of the analogy, if not identity, of this tubercle to that found in cattle, instituted not only inoculation, but also feeding experiments with the tuberculous matter, as well as with the milk and flesh of tuberculous cows. Other continental veterinarians followed in the same course; and in 1874 the evidence seemed to be so strong and decisive, that, though having to appear as an alarmist, I wrote a long paper on the malady, which was published in one of the most valuable and influential medical journals of the day.* This was the first contribution to the sanitary aspect of Tuberculosis in animals, and I then insisted upon the necessity for further investigation in this country, and the obtaining information as to the extent to which the malady prevailed among dairy and other cattle-stock. I also alluded to the probable spread of the disease by infection, gave facts in support thereof, and earnestly pointed out, that if it could be produced experimentally, by feeding animals on the flesh and milk of cattle which had been

* *The British and Foreign Medico-Chirurgical Review.* October, 1874.

tuberculous, there was great reason to apprehend that the same result might occur accidentally in our own species. I likewise referred to the possibility of the large mortality among infants from what is known as "infantile Diarrhœa," being due, at least to some extent, to their receiving the milk of tuberculous cows. In "Veterinary Sanitary Science and Police" (vol. ii.), published in 1875, I also included it as one of the diseases which caused great destruction among cattle by its infectiousness, and treated it as a malady which, for this reason, and also because of the grave risk of injury to mankind, should be made the subject of Government control.

But neither then nor since has anything been done to protect animals or people from the disorder; indeed, the subject appears to have dropped somewhat out of notice in this country, and I suppose until public pressure is brought to bear on the Government, when the mortality among people, from Scrofula, Consumption, and other morbid conditions due to this cause, has reached an alarming extent, no measures will be adopted. In sanitary matters, and especially when animals are concerned, our Government appears to be unable to adopt the initiative. There is an absence of intelligence that requires imparting to it, and a vast amount of torpidity of which it can scarcely divest itself. The history of animal plagues affords overwhelming evidence of this fact.

On every occasion when an opportunity presented itself, I have insisted upon notice being taken of the disease, and all new facts with regard to it I have chronicled in the VETERINARY JOURNAL. My views have received the support, I believe, of all the more advanced members of the profession, and many among them have afforded confirmatory evidence from their own experience. Professor Walley, in particular, in his most praiseworthy work—"The Four Bovine Scourges"—has given us the benefit of his investigations; and another close observer and excellent veterinarian, Mr. Gray, of Bakewell, Derbyshire, has contributed some most valuable information in the Journal just named.

Whatever amount of indifference or absence of knowledge the Government may manifest, it is nevertheless incumbent on us,

as guardians of the animal wealth of the country, so far as sanitary science is concerned, and also, to some extent, of the public health, in the matter of food, to not only keep this very serious matter in view, but also to ascertain all we can with regard to it. This is a duty we owe to our science and to the public; and in restraining the spread of the disease, and protecting the public from very possible risk, we can do much individually, until such time as the Government, of its own good will and pleasure, takes the matter up, and treats it as a question of national health and wealth.

To what extent the disease prevails in this country, I know not, neither do I know how information can be obtained. There is no sanitary inspection of dairy stock ; our public abbatoirs are, I regret to say, exceedingly few, and I am not aware whether the carcases of all animals killed therein are inspected while being dressed, or what steps are adopted to discover disease in them. The private slaughter-houses afford ample opportunity for killing, dressing, and disposing of diseased animals without observation ; and until public abbatoirs can be generally instituted, placed under regular sanitary surveillance with regard to the condition of the animals killed in them, and statistics drawn up with respect to the diseases observed, we shall have no conception of the extent to which this and other disorders prevail among animals destined as food for man, especially in our large towns. But in the meantime, if we refer to some statistics collected on the Continent, we shall obtain some idea as to the prevalence of Tuberculosis there, and be able to infer what this may be in our own country.

In 1789, 1791, and 1794 it appears to have been very prevalent in the neighbourhood of Paris, for the elder Huzard, a famous veterinarian of those days, was commissioned to attempt its eradication; while in 1791 it caused much destruction of cattle in the department of La Meurthe. In the departments of the Jura, Doubs, Vosges, and elsewhere in France, it has also at various times caused alarm and loss ; and Hurtrel d'Arboval estimated that one in every eight or ten head of cattle was destroyed in Brie, Beauce, Caux, and other parts of that kingdom, by this so-called "Phthisie Pulmonaire." In Germany the

disease is also very prevalent. Wolff asserts that in the county of Leignitz, Saxony, fifteen to twenty per cent. of the cattle are affected. At the abbatoir of Munich, in 1875, Drechsler found 704 cattle tuberculous out of 55,882 head; those with only isolated tubercles were not included. At Mannheim, Fuchs discovered that in 1,831 cattle, 65 were tuberculous.

Zippelius, of Obernburg, about ten years ago commenced an inquiry in this direction, and after the most careful observations in a number of district abbatoirs, up to January 10th, 1873, he estimated the number of cases at 2.50 per 1,000 of the bovine population throughout this part of Germany. He only took note of those cases which appeared in the registers of the abbatoirs as undoubted Tuberculosis; so that his figures should be considered as rather under than over the mark, with regard to the frequency of the disease. As the result of his inquiry, he came to the following conclusions, which are of importance in relation to our subject: they were derived from investigations carried on in thirty-six different localities:—

1. That bovine Tuberculosis is most common in poor localities.

2. That the localities in which the disease is frequent are all situated in valleys, and that it is all the more common as the valleys are narrow and deep.

3. That the mortality caused by Tuberculosis is less, all things being equal, in the parts of the narrow and deep valleys where the dwellings are widely separated, than in those where they are not so.

4. That the localities situated in elevated plains freely exposed, are seldom visited by the malady, even if the cattle are maintained in conditions little favourable to health.

5. That the mortality from this affection is, all other conditions being equal, greater in localities enclosed by walls than in those which are open.

6. That in those places where Tuberculosis is most frequent, the largest number of tumours about the head are met with.

7. That in the seven localities in the district of Obernburg, where the smallest number of cases is seen, there were 47,981 cows; while in that where they are most common, there were 57,083 cows per 1,000 head of cattle.

8. That the frequency of Tuberculosis in man, is, in general, independent of the use of the flesh or milk of tuberculous cattle—at least, no relation could be established between these two factors, though no restriction is placed upon the consumption of the flesh and milk.

9. That the mortality from Tuberculosis in man in the Obernburg district is 3.32—that is, higher than the average mortality from the malady in the other parts of the kingdom (in which it is 2.16) ; that this malady in man generally depends upon the same local conditions as bovine Tuberculosis, though in a less degree ; that in none of the localities has the mortality from the disease in man attained the proportions of that in cattle, but that it is more uniformly spread in the different localities. Doctor Hoffmann thinks, and with good reason, says Zippelius, that the frequency of consanguineous marriages has a notable influence on the great number of deaths from Tuberculosis occurring amongst the inhabitants of that district.

In taking into consideration that, in his statistics, he has only been able to include those cases of bovine Tuberculosis in which the affection is most evident in the serous membranes and in the pulmonary parenchyma, and that the life of the animal is much shorter than that of man, Zippelius expresses the opinion that bovine Tuberculosis is more common than that of man. Some of the points referred to here we shall touch upon again. In the meantime, let us refer to Bavaria, where very accurate records appear to be kept, and particularly at the Augsburg abbatoirs, which are under the supervision of that excellent and talented veterinarian, Herr Adams, the editor of the only weekly periodical we possess—the *Wochenschrift für Thierheilkunde und Viehzucht.* In Bavaria the question which was brought forward by the late Professor Gerlach, of Berlin, concerning the use of the flesh and milk of animals affected with Tuberculosis, claimed special attention ; because it appeared to remove all doubt that this disease, which was so common in that country, was identical with Phthisis in mankind. If the conclusions arrived at by Gerlach, from his feeding experiments (viz., that the flesh and milk of tuberculous animals must be excluded from human food on principle, since, by using it in its

raw or half-cooked state, Tuberculosis is liable to be reproduced in man), were carried into practice, and the connection of Tuberculosis in cattle with that of the human subject be finally established, it was felt that the result would be to furnish the sanitary and veterinary police with a very difficult task, as well as involving serious loss and injury to the agricultural interests. For it was certain that millions of marks would be lost every year in the flesh and milk of tuberculous animals, without the possibility of succeeding, as many had hoped, in stamping out Tuberculosis in cattle, or in entirely preventing the use of the flesh and milk of such animals. Gerlach's views were, however, so far at variance with the general opinion of German veterinarians, that his experiments relative to the transmissibility of Tuberculosis to man, although, no doubt, worthy of good attention, could not yet be regarded as thoroughly conclusive.

The Veterinary Association of Munich took the opportunity, on the presentation of a report with regard to the harmful character of the milk of tuberculous animals, to raise a thorough discussion concerning the admissibility of this and the flesh of these creatures being issued for human food ; and at the same time, to assert that, in Bavaria, no sufficient statistics regarding the frequency of the disease were at hand, and without which it would be impossible to take proper measures for its suppression, or form a reliable opinion as to the pernicious influences resulting from it. This association therefore considered it desirable that the official veterinary surgeons, with the assistance of the local members, should collect and submit statistics as to the localities in which it prevailed, as well as with regard to its extension, together with observations concerning its ætiology, and their opinions as to the noxious or innocuous effects of the flesh and milk of tuberculous animals when used for human food.

After a decision by the late chief veterinary surgeon and director of the Central Veterinary School at Munich, to the same effect, it was enacted, by resolution of the ministry, on December 16th, 1876, that this procedure should be adopted throughout the whole of Bavaria from January 1st, 1877, and that the reports should be sent in to the ministry every half-year, with the neces-

sary observations and proposals. The ministry, guided by the information contained in these reports, made a subsequent order that they should no longer be rendered half-yearly, but yearly, along with the veterinary reports, and that this should commence in 1878. The report was also to be accompanied by a tabular synopsis of all cases of Tuberculosis, arranged according to the common forms which were already in use. But, what with the old-fashioned methods, and the absence of scientific knowledge on the part of the country inspectors, and also what with the difficulty of coming to any decision as to the original causes and other matters relative to the disease, as well as the circumstance that many tuberculous animals wholly escaped observation, an exact report, showing the frequency, etc., of the disease, could hardly be expected. It did not, however, seem unreasonable to think that such an amount of information might be obtained, as would serve (when taken in conjunction with returns made elsewhere) to establish, at no distant date, certain leading points for the guidance of the cattle breeder and of the sanitary and veterinary police. How far this supposition was correct, may, perhaps, be seen from the report.

An inspection of the questions put to the veterinary surgeons, seemed to warrant the assertion that really careful answers to them would lead to a deeper insight into the essential nature of Tuberculosis. Simple as these questions were, however, mistakes were made, which, it was hoped, would be avoided in later reports.

In 1877, it appears that there were 4,976 cases of Tuberculosis reported; these were distributed as follows: Upper Bavaria, 1,557; Lower Bavaria, 395; Pfalz, 509; Upper Pfalz, 425; Upper Franconia, 270; Middle Franconia, 227; Lower Franconia, 447; and Swabia, 1,096; so that Upper Bavaria and Swabia had more cases (2,653) than all the other counties (2,323) in Bavaria.

I may allude here to some of the results of this inquiry, and which refer more especially to the cause of Tuberculosis. The hereditary tendency of the disorder appears to be established in nearly all the reports. In 123 cases this tendency was referred more particularly to the female side, in 43 to the male. Twelve per cent. of all the cases observed in animals under three years

of age were referred to this cause; while in 22 reports the tendency is attributed to "in-and-in" breeding. In 24 reports it is given as the direct result of co-habitation; while, *mirabile dictu!* 3 cases were supposed to be due to infection during the act of copulation. Ten reports give the abundant secretion of milk as the cause; and in four it was suspected that abscesses of various sizes had given rise to it. Two reports deny the influence of breed in its production, while five distinctly affirm it: the "Algäuer" cattle having a greater predisposition to Tuberculosis than all the Bavarian home-bred cattle, the disease being less frequent in these. The "Algäuer" cows are famous for their milking properties. The general result of the reports goes to show that 5.84 out of every 1,000 cattle in Bavaria are affected with Tuberculosis.

Adams' reports are very valuable in this direction, and are, perhaps, more instructive than the general reports; inasmuch as they are based on the observations made in the abbatoirs, where not only was the condition of the animals ascertained during life, but also after they were slaughtered. He notes that the important towns of Munich and Augsburg chiefly receive their slaughter cattle from Upper Bavaria and Swabia—the two counties most infected with Tuberculosis—40 per cent. of the former going to Munich, and 20 per cent. of the latter to Augsburg. The value of his figures is all the greater when we learn that 1,204, or 24 per cent. of the cases reported, were discovered in the living animals in various places.

In the six years previous to 1877, in 69,316 animals killed at the Augsburg abbatoir, 682 were affected with Tuberculosis (51 bulls, 151 oxen, and 480 cows)—about 1 per cent.

In 1877 there were slaughtered at Augsburg 37,883 beasts, of which 25,000 were calves of an average age of three weeks. Among these, 281 were tuberculosed, but only 4 were under one year old. Of the diseased animals, 37 were bulls, 47 bullocks, 187 cows, 6 heifers, and 4 calves. The conclusion arrived at was that Tuberculosis is relatively most frequent in cows, and is exceptional in calves.

In 1878, 10,965 cattle over a year old, and 21,116 calves from two to four weeks old, were killed. None of the calves were

tuberculous, but of the cattle there were 256, or 2.31 per cent. According to the reports for the whole of Bavaria, 0.16 per cent. of the entire bovine population was tuberculous. With regard to sex, of the 10,965, 5,901 were bullocks (of which 610 were young), and 2,380 which were not emasculated: making 8,281 males; with 1,862 cows, and 1,222 heifers which had not been bred from: making in all, 2,684 females. Of these 99, or 1.19 per cent. of males—39 steers and 60 oxen; and 157 females—151 cows and 6 heifers—were tuberculous. Of the total number, 29 were between one and three years old, 141 between three and six years, and over six years, 86. Of the 99 males, 39 were entire, and of these 16 from one to three years, and 23 from three to six years, were affected; while of the emasculated (60) from three to six years 44, and more than six years, 16 were diseased. Of the 157 cows (including the 6 heifers), 16 were from one to three years old, 70 from three to six, and 71 over six years.

In 1879, of 66,403 animals slaughtered, 2,202 were diseased, of which 1,018 were cattle, 1,137 sheep, and 47 pigs. Of these, 321 cows and 2 swine were tuberculous.

In Italy, Holland, Switzerland, and other temperate countries, Tuberculosis makes more or less havoc among bovines, and in Australia, New Zealand, Mexico, and America—United States and Canada, it is well known. Strange to say, it does not appear to be a disease of cold climates. Krabbe, the well-known veterinary professor of the Copenhagen School, says it is rare in Iceland; as well as in the polar and northern regions of Norway, Sweden, Lapland, and Finland, according to Stenstroom.

As I have said, we know not to what extent Tuberculosis prevails among our cattle; but there is good reason for thinking that it exists as widely and generally as in any other country. Our dairy-stock are probably largely infected, and among high-bred cattle it is not only prevalent, but, from what I can learn, it is on the increase. Assuming the disease to be as common in this country as in Bavaria, then we may reckon 5 per cent. of our bovines as infected. In Bavaria there are more than 3,000,000 cattle; so that about 5,500 are tuberculous. Applying this estimate to our own immense bovine population, we see at

once the startling amount of contamination which may exist in our pastures and cowsheds—contamination which is all the more serious, when we reflect that the public health may also be seriously compromised thereby.

With regard to the *pathology* of bovine Tuberculosis, it seems now to be admitted by all those authorities who are most competent to give an opinion, that it bears the closest analogy to, if it is not absolutely identical with human Tuberculosis—the majority incline to the latter opinion, and anatomically, clinically, and experimentally, as well as ætiologically, they must be looked upon as the same. The malady has scarcely been studied in this country, but it has long been known by various local names amongst farmers, farriers, and butchers, while its external manifestations have been looked upon, by those veterinarians who recognised it, as something akin to Scrofula. In France it has also had local names—such as *pommelière*—but it is generally found described as Pulmonary Phthisis and Tuberculous Pleuropneumonia. In Germany, its early name, *Franzosenkrankheit* (the French disease), was given to it because it was thought to have a syphilitic origin from mankind—hence for a long time the flesh of diseased animals was not eaten in that country; *Stiersucht*, *Perlsucht*, *Lungensucht*, are also designations given to it in Germany, as well as Tuberculosis.

Furstenburg was the first, I believe, to designate the morbid productions which characterise the disorder as "sarcomatous," the disease itself being looked upon by him as a "*Sarcoma dyscrasia*." Quite recently, Professor Anacker, of the Bern Veterinary School, has proposed to name it "Tuberculosis fibromatosa," and "Margarosis" (*μάργαρον*, a pearl, from the pearly tint and shape of its nodules).

What Glanders is to solipeds, so is Margarosis or Tuberculosis to the bovine species; and with regard to pathological anatomy and some other features, there is the closest analogy between them; though in some other respects there are marked dissimilarities. It consists essentially in polymorphous growths, partly in the form of the characteristic miliary tubercles, and partly in the shape of new sarcomatous formations, which are due to, or accompanied by, inflammatory processes, in which we have

tuberculous and caseous inflammation. The malady in cattle is nearly always of a chronic nature—particularly at the commencement ; there being a progressive formation of tubercles, which become developed in certain membranes and internal organs. These tubercles subsequently invade all organs or textures, though they have a predilection for some more than others—such as the lungs and the pleura and peritoneum. There the tubercles increase in circumference, and themasses often attain enormous dimensions. Other tubercles are developed on and in organs ; the thoracic and abdominal lymphatic glands are also invaded by them, and at last the whole of the organism is more or less permeated by these formations. From what would appear to be, primarily, a local affection, there is a gradual generalisation of the infective process : even the muscles, bones, and other textures becoming the seat of the new formations. When tuberculisation has proceeded to an advanced stage, general constitutional disturbance ensues—a kind of tubercular cachexia being developed. There is then imperfect blood formation, as well as imperfect nutrition of the tissues and organs : in fact, the nutritive functions are impaired as in other general chronic diseases.

(*To be continued.*)

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## GREGARINOSIS IN FOWLS.

BY A. E. MACGILLIVRAY, M.R.C.V.S., BANFF.

THE editorial remarks on the above topic in last month's Journal ought to be very gratefully received by the veterinary profession in this country, for they bring fully under our consideration a widely spread and very destructive, though almost unnoticed disease amongst fowls, etc. For my own part, I heartily thank Mr. Fleming for so kindly presenting us with such a synopsis of the Continental researches and opinions on this interesting subject.

Curiously enough, a few days after receiving the last Journal I was consulted about the poultry on a large farm in this district, great numbers of them had every now and again been dying off for some two years ; in fact, the owner declares that within that period nearly two hundred (young and old) must have died !

Quite recently they had begun to die off rather numerously, so the owner thought it as well to consult me.

Accordingly I made a *post-mortem* examination of a fowl recently dead. I found the carcase extremely emaciated, so much so that the liver, which was quite visible through the greatly attenuated and nearly transparent skin, was easily seen to be thickly studded over with the yellowish-white nodules which are so characteristic of Gregarinosis. On laying open the abdominal cavity, the liver presented a most beautiful appearance, the distinctly-defined yellowish-white nodules contrasting so well with the glistening dark-reddish brown of the liver parenchyma. The liver was considerably enlarged, and contained a great many nodules of various sizes, some of them being fully as large as grey-peas. There were traces of the entozoön in the other organs of the body, and the whole was anæmic and marasmic in the extreme, death having occurred from sheer systemic exhaustion.

Calling at the farm a few days afterwards, I had one of the sufferers killed, and took the body away with me for more minute examination. This fowl was not so much emaciated as the one that died. The symptoms, when the creature was alive, were much the same as those enumerated in last Journal, with the addition of a very unsteady gait, rolling from side to side, and occasionally tumbling after the head. The owner declared that it would have resisted the disease a few days longer, but being a very likely subject for a *post-mortem* it was slaughtered.

On proceeding to remove the skin, I was rather astonished to find great numbers of gregarine nodules on the surface of the muscular tissues—about the sternum and abdomen, and much more extensively on the large muscles of the posterior extremities. These nodules were of several sizes, some scarcely perceptible to the naked eye, others fully as large as flax-seed, and of somewhat similar shape. The smaller nodules were often in groups or clusters, from five to a dozen in each ; the larger were generally isolated ; neither large nor small were embedded in the muscular tissue ; and all were lighter in colour than those found in the liver of the other fowl—being almost white. Each nodule had a well-defined enveloping capsule, far more so than those found in the liver of the first fowl.

Opening the abdominal cavity, I found very few gregarine utricles (this is a good designation for the enveloping capsules), and these of small size; some on the inner surface of the abdominal parietes, others on and in the intestines. The intestines were almost empty, with the exception of a little dark-coloured mucus. The liver was only about one-third the size of that of the first fowl, being evidently atrophied, but it contained no nodules. The anæmic condition of the entire abdominal contents was quite obvious. The heart was atrophied, pale, and flabby, and had a thick abnormal membrane enveloping its apex—apparently resulting from the deposition and solidification of some exudate; with the naked eye I could find no traces, however, of the entozoön in this false membrane. But under the microscope very minute psorospermic nodules (cellules) were discernible, and in the attenuated and flabby muscular tissue of the heart, I have every reason to believe that I discovered the fully-matured entozoön, at least I saw several bodies resembling that seen in Mr. Fleming's work. The mouth, throat, and trachea were filled with a thick, yellow, stinking mucus; the tongue, throat, and part of the palate were covered with a whitish membrane; very minute gregarine utricles were quite numerous in this region.

If this fowl had not been killed, it would have died from syncope, due either to suffocation or cessation of the heart's action. I consider the unsteady gait of this fowl to have been a sign of threatening syncope from one or other of these causes.

It is quite possible that Gregarinosis may be, and no doubt often has been, confounded with Tuberculosis, Trichinosis, or even coiled-up and encapsuled strongles. At any rate, for a long time, when I made *post-mortem* examinations in this disease I generally considered the nodules to be tubercles; but ultimately, finding no true tubercular matter, I searched for parasites, and was equally unsuccessful. These nodules or utricles generally contain only oviform psorosperms or cellules, and hence the failure to find either the fully-matured entozoön, or, on the other hand, the characteristic tubercular cell.

There is a species of *subcutaneous acarus* found in the cellular tissue of fowls, which gives rise to symptoms somewhat analo-

gous to those detailed in my second *post-mortem*. A microscopic inspection, however, will easily settle any diagnostic difficulty; besides, here we have very seldom the deadly results seen in Gregarinosis. A capital dissertation on this subcutaneous acarus and its metamorphoses, from the pen of M. P. Megnin, will be found in the *Recueil de Médecine Vétérinaire* for 15th September, 1877.

In making *post-mortem* examinations and subsequent microscopical investigations, to decide as to whether we have actually to do with Gregarinosis or not, it is not to be expected that an entozoon such as that depicted by Mr. Fleming (see "Veterinary Sanitary Science," vol.ii., page 5 10) will generally be discovered to reward our labours; neither is such necessary to determine the actual existence of this parasitical malady.

In the *Recueil de Médecine Vétérinaire* for 15th December, 1878, will be found a concise, clear, and comprehensive report by MM. Megnin and Railliet, on Hepatic Gregarinosis in the rabbit (*Psorospermose Hepatique du Lapin*), in which the details given exactly resemble what I found in the liver of the dead fowl. MM. Megnin and Railliet state that the utricle is generally filled with oviform psorosperms, or cells which may ultimately assume other shapes, such as that given by Mr. Fleming (*ut supra*), and hence the designation Gregarinosis—gregarine being the name of the supposed mature entozoön. MM. Megnin and Railliet's paper is well worthy republication in English.

There is one great difference between the gregarine nodules and those of Tuberculosis and Trichinosis, which I cannot help noticing—namely, that the nodules of the former have extremely slight connection with the tissues where they are found; I mean, they can be removed from their *nidus* with the greatest ease. This may seem immaterial, but it has often struck me as quite peculiar to Gregarinosis. The nodules seem to *displace* the tissues where they exist, and when scooped out, leave only the empty *nest* behind them. This is more particularly the case with the hepatic gregarine nodule; and I may here say that the most beautiful examples of this disease will be found in the liver.

There is a disease in parrots called *Le Muguet Jaune* (the

"Yellow Thrush"), an excellent description of which will be found in the recently-published handsome little volume on "Le Perroquet," by M. Paston Percheron, V.S. This disease is characterised by little yellow caseiform spots, extending from the beak away down the œsophagus, and sometimes into the stomach and intestines, and which M. Percheron considers to be of cryptogamic origin, the causative fungus being analogous to the *Sporotrichium* of botanists. From the course which this *Muguet Jaune* runs, and its fatality, it is to me quite evident that it is simply Gregarinosis in the parrot; and M. Percheron is not solitary in asserting that the cause is cryptogamic, for several other Continental investigators have made the same assertion, and some have even gone the length of saying that it is a connecting link between the animal and vegetable kingdoms—partaking partly of the nature of both.

In conclusion, this seems to me to be a disease almost entirely due to a deficiency in hygienic and sanitary measures; in fact as regards the outbreak referred to in the beginning of this communication, I think this is certain. Within a very few yards of the poultry house there is a large, nasty, almost stagnant pool, containing every sort of abomination found about a farm; and if I remember aright, there stood on the margin of this pool a rabbit-hutch, out of which many a good rabbit died—no doubt victims to Gregarinosis, brought on by the insalubrious situation of their hutch. It is allowed on all hands that *damp* is a frightful cause of Gregarinosis in rabbits; and it is equally certain that poultry having access to the haunts of gregarined rabbits quickly become affected.

Irrespective of this rabbit-hutch, however, I hold that this pool is quite sufficient to account for the existence of the disease at present decimating the poultry on this farm, for what was the cause in the rabbit will also be quite as effectual in the fowl. The poultry house is also rather confined; and, owing to badly designed roosting arrangements, the droppings of one set of roosters fall on those below. This is to be remedied. I shall suggest the doing away with the disagreeable pool altogether, and so prevent the poultry having access to the masses of unhealthy matter about its edges.

# REPORT OF A VISIT TO FORT WEEBER AND SECOCOENI'S COUNTRY, FOR THE PURPOSE OF TAKING NOTES ON HORSE-SICKNESS.

BY R. MOORE, ARMY VETERINARY DEPARTMENT, SOUTH AFRICA.

HEARING of the outbreak of the much-dreaded malady known by the name of Horse-sickness, amongst the horses employed in the various corps of mounted men engaged in the campaign against the chief Secocoeni, Colonel Harrison, R.E., Commanding Transvaal District, spoke to me on the subject, and we considered it a chance that ought not to be lost by the veterinary profession in gaining some knowledge of the disease. Consequently I volunteered for the front, with the intention of watching the disease, and to endeavour to modify the fatality of the outbreak, if possible.

I started from Pretoria on the 27th October, and arrived at Fort Weeber on the 31st of the same month—distance, 140 miles.

By order of the chief of the staff I joined Colonel Baker Russell's column, there to be with the bulk of the animals, and where I could see the greatest number of cases. I had been with the column six days before the first case presented itself, in a transport animal, which soon died. The best of my ponies was the next case, which died on the eleventh day after leaving Pretoria. The disease next attacked the horses belonging to His Excellency Sir Garnet Wolseley and staff, and killed three out of four that suffered. After this more than two days never elapsed without a death in some of the corps.

The horses belonging to the Transvaal Artillery—about forty-five in number—marched from Pretoria about the middle of October, by Middleberg—high veldt—to the front, were stationed with the column near Fort Weeber for three weeks, then marched to Secocoeni's town, and were on their way back after the battle, about fifty miles, when the first horse died of Horse-sickness.

*Cause.*—The cause of Horse-sickness is a point of dispute and varied opinion. Some people say it is the grass in the early morning, some say the dew, and some both, etc.; but after noting the symptoms, and seeing the *post-mortem* appearances, I will give my present opinion as to the cause.

*Incubation.*—The period of incubation is not yet exactly known. What I can make out at present is, that the greatest number of horses take the sickness in from eight to ten days after having been exposed to the cause ; yet a large number exceed that time.

*Symptoms.*—The general appearance of an affected animal is dulness, with drooping ears. The pulse at the jaw is generally weak and frequent, numbering from 60 to 80 at the outset of the disease ; it gradually runs down, and rapidly becomes imperceptible. The visible mucous membranes are highly congested, and as the disease advances they become livid, the lividity being observed in patches on the conjunctiva. On auscultation, loud crepitations are heard in the lungs on both sides. The breathing is always accelerated, and as the disease progresses it becomes laborious. The temperature of the body is elevated, rising in the evening in some cases to 105°, and falling in the morning to 103° ; it varies in different cases. Symptoms of abdominal pain are present in the majority of cases ; these are best seen in the animals that have not been doing active exercise when seized with the disease, as the lungs are not then so highly congested or sufficiently painful to divert the animal's attention from the abdominal affection.

A discharge of froth of a pinkish colour issues from both nostrils in some cases, especially in those that have been doing work when taken with the disease.

In a few cases, swelling of the head and neck is a symptom of the malady. Cold sweats bedew the body ; the animal is restless, and occasionally violent ; the extremities become cold, and the creature shivers, and wears a haggard expression till death puts an end to its suffering.

The diagnostic symptoms are the lividity of the visible mucous membranes, and the discharge of froth from the nostrils.

*Treatment.*—A great number of cases are too far gone before medicine can be administered. My treatment till now has been to bleed moderately in the first stages, when the pulse warranted it, and to give sedatives, such as the tincture of aconite ; but when the disease reached a certain stage I change the treatment and give stimulants, and strong ones. Foment the sides and abdomen with hot water—not warm water—and apply powerful counter-irritants.

One well-marked case recovered ; two others, in which a rise in temperature had taken place, and the breathing was altered, also recovered under the above treatment. In the latter cases the disease had not assumed its definite form.

After the disease has fairly established itself, and especially if the animal does any work at the commencement of the attack, treatment is of little avail.

*Post-mortem Appearances.*—The abdomen rapidly becomes distended with gas, and a great accumulation of froth from the nostrils may be seen in many cases. The muscles are generally very dark in colour, especially when the animal has been worked in the early stage of the disease.

*The Chest.*—The pleura is generally more or less congested, and underneath it, covering the lungs, is seen quantities of exuded lymph in patches, which have the appearance of a deposition of fat.

The lungs are large in appearance, and do not collapse when the chest is opened. Both lungs are invariably affected, and in the majority of cases not a single lobule escapes. When cut, the surfaces present a highly congested appearance, every vessel being charged with dark blood. The bronchial tubes are invariably congested more or less ; in some cases the smaller tubes alone are affected, in others the whole of the respiratory passages. The bronchi always contain a certain amount of the characteristic froth.

The heart, although a little affected occasionally in its serous membranes, calls for no special remarks.

*The Abdomen.*—Viewing the intestines *in situ*, they present patches of inflammation throughout. The veins are remarkably well defined, being charged with the dark blood. On being opened, the fæces contained in the bowel are rather of a fluid nature, and of a light colour. The mucous membrane is covered with a thick grumous mucus, and the inflamed patches are of a livid colour. In the small bowels of some cases, are seen little circumscribed inflammatory spots or patches.

In one case I have seen slight hæmorrhage into the bowels. Ecchymosed spots are occasionally seen on the outer coat of the bowels. The mesentery is also inflamed in patches, and the glands enlarged.

The liver, spleen, and kidneys call for no special remarks, although they are not invariably free from disease, and always share the dark colour of the other organs.

Having noticed the symptoms and *post-mortem* appearances of the disease, the circumstances under which it is contracted must be noticed.

It is undoubtedly the case that the high-veldt road is more healthy than the bush-veldt, which are the two roads to Secocoeni's country. The valley of the Oliphant's River, together with the valleys of Secocoeni's country, are acknowledged to be most unhealthy, if not fatal, the percentage being ninety-five per cent. in some seasons. These valleys are most luxuriant, the soil being several feet deep in most places—rank and loamy.

In the morning, after sunrise, or before the dew disappears, is acknowledged to be the most dangerous time for horses grazing. It is therefore thought by colonists and others, that the dew on the grass at this time is the cause of the disease. With this I cannot agree, as there is nothing in the dew or grass to affect an animal; but in the morning there is an evaporation from the surface of the earth, most abundant in rich valleys and near streams of water. With these evaporations germs are in all probability carried up, which, in my opinion, are more likely to affect the horse than the dew or grass, the germs acting as a blood-poison.

The water between Pretoria and Secocoeni's town is found chiefly in small running streams; only in one instance were the horses compelled to drink stagnant water. To the casual observer these streams appear very clear and pure, but in their course they pass over heated granite rocks, percolate through marshy ground, and are frequently contaminated by the dead bodies of oxen lying in them, or on their banks. Yet the same water passes over the "high veldt" under the same circumstances, without affecting the health of horses.

My belief is, that the disease known as Horse-sickness is the result of a blood-poison; that the poison either exists in the evaporations, or is in the water, or perhaps both. I am in favour of the former, yet I don't ignore the latter.

The disease produced by the poison is a fever of a typhoid or enteric nature, and the only evidence required to confirm it as Enteric Fever, is the characteristic ulcers found in the bowels of men who have suffered from that disease. Yet we have the circumscribed inflammatory spots, which, if time were allowed before death, might form ulcers.

At present, I believe the bowels are the primary seat of disease, and the excessive congestion of the lungs a natural result of the fever; and a great many of the sudden deaths may be accounted for, in the fact that horses are worked when suffering from enteric disease, which would, according to the laws of physiology and pathology, produce intense hyperæmia of the lungs.

Having seen that treatment has little effect, our attention is drawn towards the prevention or modification of the disease. But to attempt this on a campaign is almost impossible, as stabling is absolutely required. Horses should be kept indoors and never allowed to graze in the morning, and very little in the middle of the day. Watering-places should be carefully selected and kept thoroughly clean. Stables should be kept clean, with ample ventilation, and disinfected—lime, chloride of lime, carbolised lime, or carbolic acid are the most valuable disinfectants.

I believe that were the horses of this country well taken care of, as they are at home, the mortality would at once fall seventy-five per cent.

The minute details of the disease, and the circumstances connected with it, have not been gone into, but are reserved for another report when I have ended my inquiries, and have more time to search into the mysteries of the malady.

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## SCABIES.

BY H. OLVER, F.R.C.V.S., TAMWORTH.

ON the 12th of February, 1880, Mr. King, of Church Grove, sent a request that I would as soon as possible visit his premises, to see some horses. I did so on the following day, when my attention was more especially directed to two two-year-old colts, both

in a most emaciated condition—one in slings, the other unable to rise, when down, without assistance. Both of them were, on the greater part of their bodies, hairless ; the skin much thickened and corrugated, and on its surface was an immense amount of furfaraceous scurf, which was more or less attached to the integument. The one in slings had been given a pint of Ol. lini., at the instance of a neighbouring farrier, who had been called to see them, and consequently was purging badly, and altogether off his feed. The other one, on the contrary, was constipated, but feeding well. To the latter I gave a mild saline aperient, and to both diffusible stimulants and tonics, including repeated doses of Liq. arsenicalis. I at once concluded that I had to do with Scabies of a violent and depilatory type. On inquiring further into their past history, I found that they had been pastured during the previous summer in Sutton Park—a space of more than a thousand acres, in which the inhabitants of the neighbourhood have a right of pasturage. Consequently animals of all sorts and sizes are sent there, including several from the neighbouring town of Birmingham. The colts did not do well through the summer, but this was no exception in such a wet season, and there was nothing particular to note in their appearance, when taken home in the autumn, excepting a generally unthrifty appearance, and rough state of the coat. But they were soon after noticed to rub a good deal, the hair to come off in patches, particularly about the neck and withers ; and, although supplied with hay in addition to a good pasture, they gradually fell away, and became weaker, notwithstanding a liberal diet and good appetite. Previous to my being called, the owner had dressed the skin with ammonia water, obtained from the gas-works ; and at the suggestion of the farrier had given doses of linseed oil, etc., to no good purpose.

In addition to the medicine given internally, I directed that they should each have two thorough good washings with soft soap and water, and afterwards the following liniment to be rubbed into every part of the skin, Ol. lini., Ol. terebth., Ol. picis., *aa*, with an addition of Sulphur flor., this to remain on for three days, and then to be again washed. My patients being eight miles from Tamworth, I could not pay so much

attention to them as I could have wished, but again visited them on the 23rd, when I found the skin much cleaner, but still corrugated and scurfy in places. The one in slings was more depilitated, the bowels irregular in their action, sometimes purging, the fæces being very fœtid, and at others constipated. The other had a tendency to constipation, but a liberal supply of bran and carrots corrected this. I found that the one in slings had a large abscess formed in the groin, which I opened, when it discharged a great quantity of laudable pus. This, added to his already weak state, led me to give an unfavourable opinion, and I afterwards learnt that he died on the 30th instant. The other one I again had dressed with the same liniment, and he ultimately recovered, the hair growing very rapidly, but even now (April 10th) he is not strong or gaining flesh fast.

On this, my second visit, Mr. King requested me to look at two other colts, that had been running in the same field as the two previous ones for some time. I found that both of them were similarly affected, though in a less degree. The neck and shoulders were, to a great extent, denuded of hair, and there was the same thick scurfy and corrugated skin. On the loins and quarters could be felt nodules of different sizes, which, on being irritated caused the animal intense pleasure, and on removing the scab, a yellow serous effusion was exposed on its under surface. It being quite evident that these colts were affected in a similar way to the former ones, I directed that they should be dressed as the others had been. I was then taken to six cart-horses, and discovered that they were most of them rubbing themselves; and on examination I found nodules on the skin and other symptoms of Scabies; so I advised that the whole lot should be washed and dressed, the harness-room, etc., well cleansed with boiling water, and the stables and everything with which the horses had been in contact subjected to boiling water or whitewash.

This treatment having been thoroughly carried out, I found on again visiting, on the 29th, and also on March 6th, that everything was going on satisfactorily.

So far there does not seem anything very strange or extraordinary in this outbreak. The ordinary Mange is common

enough to most practitioners, and is readily amenable to treatment, it is also contagious. But in ordinary Scabies or Mange there is one symptom which is very characteristic of that disease, viz., the presence of a few hairs remaining on the affected part, which stick out like bristles, and are so firmly fixed that they are with great difficulty removed. This symptom was entirely absent; every hair was gone, the skin dry and powdery, and no sign of a hair-bulb in the skin; and, moreover, the parasite seemed to carry everything before it, and not to wander from place to place, as is so often seen. Another symptom that struck me as peculiar was, that when the affection was so far advanced that the hair was gone, and the skin corrugated and scurfy, the irritation also ceased in that part, and the animal left off rubbing.

Even if there was nothing more to chronicle, I consider the outbreak of more than usual interest; and especially so, as I have since seen other cases proceeding from the park, and have heard of more, some terminating fatally. I very much regret that I did not apply the microscopical test to the parasites, and so have removed any doubt as to the cause of the affection. With the assistance of some medical friends, I did try to find an acarus after the animals had been dressed, but we failed to get a living one, and consequently were not able to obtain actual proof that the animals were suffering from sarcoptic and psoroptic Scabies, as was suggested by a perusal of those affections in Mr. Fleming's "Sanitary Science and Police," and by that gentleman himself in reply to a communication from me.

The one point of more especial interest in this affection is, its transmissibility from the equine to the human subject. A few days after my first visit, I had a most uncomfortable itching on my leg, with a slight eruption resembling Nettle Rash. I was at once suspicious of the cause, and consulted two or three of my medical friends, but they never knew a similar case, and called it "Nettle Rash." My opinion, however, was soon confirmed; for on again visiting my patients, I found that every one who had been in contact with the horses were similarly affected, excepting those who had applied the liniment, not all in the same part of the body, but generally on the legs, arms, and shoulders, and those who had been with the animals most were the most affected.

It did not cause any pain or derangement of the general health, but the itching was intolerable. There was a marked distinction to the symptoms produced by the human sarcopt, both in the appearance of the eruption and in the locality chosen by the parasite in burrowing; nor did the eruption extend, except from the migration of the parasite, for on a fresh eruption appearing the old one died away. Personally, I applied a dressing of sulphur ointment which had the desired effect; two or three of the others followed my example, with a similar result. Two preferred to use the liniment prepared for the horses, and it was quite efficacious. In one instance, nothing was applied, and the sarcopt appears to have lived only a short time in its foreign soil; for the eruption shortly subsided, and the subject of the attack felt no further ill effects.

[Our army friends, and especially those who were in the Crimea, will recognise at once in this description the aggravated form of Scabies, which causes so much destruction among military horses exposed to hardship and bad weather.]

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## ANTHRAX FEVER, OR LOODIANAH DISEASE, IN INDIA: ITS SYMPTOMS, TREATMENT, CAUSE AND PREVENTION.

BY JAMES MILLS, M.R.C.V.S., ROYAL HORSE ARTILLERY.

(*Continued from page 237.*)

HORSES in all states of condition are liable to become attacked, but those in good condition are more likely to recover than those in a poor state; as an instance of this, we have the grass-cutters' ponies—not one of them recovered. Of course it might naturally be considered that they (G. C. ponies) would not be afforded the same amount of treatment as the troop horses, but I have every reason to believe they did. One circumstance I may also mention is, that they died very soon after being attacked—in fact, simply collapsed, evidently from want of strength to combat with the malady.

*Treatment.*—It would betray a degree of absolute weakness to expect that good will accrue from any mild or palliative measures; it is a desperate and most fatal malady, and it must be treated as such. My experience teaches me that remedial agents must be promptly and energetically applied; if not, little hope of success in the treatment may be expected.

I know of no disease where all the science in the healing art of the veterinarian is more required than in this: he has thrust upon him a number of acute and dangerous symptoms, all waiting for speedy relief, if such is possible.

Let it be borne in mind throughout the treatment, that this is one of the most "septic" diseases we have to encounter; therefore we must base it entirely on "antiseptic" principles, consisting of antiseptic conditions, and antiseptic regimen, as well as antiseptic medicines.

Our medicinal agents must be those selected for their properties of being capable of affording speedy and effectual assistance. There is no drug which can more readily or with more certainty effect so desirable an object in this disease as carbolic acid, and which justly ranks first (at least, in my estimation) of all other medicines in the treatment of Loodianah Fever. I employed with marked success this acid, in ʒj. doses, in conjunction with a vehicle of Ol. Lini., and repeated it at intervals, varying from an hour-and-a-half to two or four hours—of course being entirely guided by the severity of the case. If very severe, the acid must be given at short intervals; if, on the other hand, mild, at longer intervals—but bear in mind, that although we see the symptoms abating, that is not a guarantee that we should suddenly cease with the carbolic treatment; it ought to be continued, but gradually diminishing the doses, and extending the intervals, until recovery is complete. We must, as it were, keep the system under its influence, to completely arrest the progress of putrefaction, and to destroy all trace of it, as well as the bacteria which are the seeds of it.

Give with the first dose of the carbolic acid not less than a pint of the linseed oil, as a laxative is required to rid the alimentary canal of any effete material it may contain, and no better one will be found than this oil. Avoid giving aloes,

as it is too drastic, and liable to produce irritation of the bowels.

To relieve urgent symptoms is now our next object, and also to support the powers of the system to combat with the disease.

Where the fever is high, give the chlorate of potash and quinine, repeated two or three times a day. I found this combination most beneficial, gradually reducing the dose as the fever abated.

If the patient shows any signs whatever of exhaustion, lose no time in administering plenty of diffusible stimulants. The carbonate of ammonia will be found the most suitable, given in bold doses, as it is extremely valuable, not only from its power of exciting the nervous energies, and through them the other bodily functions, but from its solvent effects on the blood. If the carbonate is not at hand, any of the other preparations of ammonia may be used; failing them, the preparations of ether; and if it should happen that you run short of stimulating drugs, resort must be had to spirits or beer. In the last stages of this disease, and when, in several instances, life appeared about to terminate, by giving a pint of warm beer three times daily, the patient has rallied and eventually recovered. In the second outbreak at Bareilly, I used beer largely as a stimulant, and found it most useful.

The action of the skin must be scrupulously attended to, as we know it is an active agent in removing foreign and effete matter from the system, and especially so in a tropical climate, where its functions are brought into greater requisition than in a temperate zone. Keep the skin acting well in the first stages, and place the animal beyond the reach of draughts, especially of the cold night air, as this air is liable to arrest the functions of the skin, and to drive the blood to the already weakened internal organs, which would be probably attended with disastrous results. Of course, to accomplish this, it is best to place the patient in a comfortable loose box, but that is not always procurable, as probably after the first case has shown itself, you have evacuated not only the stables, but the station as well; however, an old tent can generally be got from the commissariat department, which

I found answered very well indeed as an hospital, as it could be shifted to any situation one pleased. A large, double-poled soldier's tent is the best.

In cases where swellings appear on the throat and vicinity, no time should be lost in the application of hot fomentations, but applied under your own immediate supervision, as, if left to others, more harm than good will accrue from their use. The swelling of the throat must be carefully watched, and when signs of suffocation manifest themselves, tracheotomy must be performed. After the tube is inserted, it is very liable to become clogged with mucus, as the bronchiæ are then throwing off a larger amount than in almost any other disease; therefore it must be frequently removed and cleaned. If the patient should recover, and if there is any thickening of the tissues left as a result of this swelling, the application of a blister of biniodide of mercury will aid materially in its re-absorption.

If the brain is seriously implicated, give Fleming's Tinct. of Aconite, which acts both as a sedative and febrifuge. Also remove the hair from the poll, and apply a strong Cantharadine blister. Do not prescribe Aconite if the brain-symptoms are those of Coma. Stimulants must then be given.

When the abdominal pains are very severe, in addition to the giving of sedatives, put a hot "pack" on. This consists of enveloping closely the abdomen in a rug or blanket wrung out of hot water, then covering it over with several dry ones, to exclude the air, and fastening all firmly to the body with rollers.

If Diarrhœa be present, it must not be suddenly arrested by astringents, as it is due, probably, to the irritation of the ulcerated bowel by fœtid matter; and if the action of the bowels is stopped, it is only reasonable to infer that such treatment would be unwise, as the diseased products would be thrown back on the system, and in all likelihood produce death.

Where ulceration of the intestines is suspected, endeavour to heal them through the system; you cannot act directly on the ulcers themselves, therefore improve the tone of the constitution, and they will in time put on a healthy action, the Diarrhœa will cease, and the bowel will again assume its normal state.

The lungs can be assisted materially in throwing off the large

amount of mucus which is secreted, by the giving of expectorants, and by the application of counter-irritants. The best, simplest, and most direct expectorant is the vapour of warm water, kept up with untiring energy until relief is obtained, combined with an occasional dose of the Spirits of Camphor. It is no use attempting to give Camphor in its solid form in a bolus, as the disturbance it will cause will produce more harm than the Camphor will do good; and if even the exhibition of the spirits is likely to give rise to disturbance, place it in the water and allow the patient to inhale it. Mustard to the chest, at first only on a portion of it, so as to leave room for future counter-irritation if found necessary. After sponging this sinapism off, apply a hot pack, as recommended for the abdomen.

You never do wrong by directly treating the liver in all cases, as it is sure to be affected.

Firstly, give a few doses of Mercury, followed up by the infusion of Chiretta. Counter-irritants may also be employed with benefit.

When the kidneys and bladder are involved, give linseed-tea and barley-water to drink. Locally, apply hot fomentations or a sheep-skin.

As the patient nears recovery, give the vegetable and mineral tonics, combined with changes of air, and the best procurable food.

Let your hospital be on as dry and lofty a site as possible; particularly avoid damp and malarious situations; and, above all, let the patient be carefully nursed throughout. Disinfectants, such as McDougall's powder, carbolic acid, etc., must be freely sprinkled near to and around the animal affected.

Just one word regarding the food. It must be selected for its virtue of being easily digested and assimilated, if not, it will throw the case as far back as ever; therefore bear in mind that the viscera are unable to do their duty of assimilation as they would in health, so choose and regulate the diet accordingly.

*(To be continued.)*

# DIFFICULT CASE OF PARTURITION IN THE COW: A CELOSOMIAN MONSTROSITY OF THE CALF (AS INDICATED IN FLEMING'S "VETERINARY OBSTETRICS," FIG. 88, PAGE 394).

BY W. J. ARKCOLL, M.R.C.V.S., MACCLESFIELD.

ON March 5th, 1875, Mr. Ridgway, Upton Hall, called upon me about six o'clock p.m., desiring my attendance to a cow of his which was calving. I was out at the time, but was expected to return directly. However, in his difficulty, he said he could not wait, and must have some assistance at once. But he came again the same evening for me about ten p.m., stating they had done everything they could for the cow, but thought the calf would require cutting away, and requested me to go at once. On my arrival, I found a neighbouring cow-doctor in attendance, and quite energetic. I ascertained that the cow had been attempting to calve, showing pains for the most part of the day, and with the above assistance the calf's head was born, but could proceed no further. Upon examination, I found the head protruding from the vagina, and all four feet in sight; but the neck, knees, and hocks were firmly wedged in the vagina, owing to the traction which had been exercised by five or six powerful men. From the peculiar position of the fœtus, I was at first under the impression I had twins to deal with—viz., head and fore legs of one calf, with hind legs of the second one; so made inquiries whether the general appearance of the cow previously had indicated such a condition, but was answered in the negative. I then secured cords to the hind legs, and made strenuous but ineffectual attempts to return them, though during my efforts I detected I had a malformed fœtus to contend with in the one with the head born, as the elbows were bent upwards above the neck (similar to the position a man assumes if he places his hands back to back above his head), with both hind legs of the supposed other twin-calf resting upon the neck and between the elbows of the foremost one. As I was still under the impression there were twins, some practitioners would ask, Why not remove

the head? My answer is, I had no difficulty with the head, having sufficient space until I reached where the neck, hocks, and knees were so wedged, as before stated, and every effort proved futile to return the hind legs. I therefore decided to try extra traction upon the neck and fore limbs, directing my assistants to pull at these parts—myself pushing the hi nd limbs back—when, to the surprise of every one present, the whole fœtus came away, doubled up, and presenting a very curious appearance.

*Description.*—Besides the elbows being bent up, as specified above, the spine was abruptly curved backwards, the pelvis and hind portion of the body resting upon the shoulders, thus accounting for my impression of its being a twin birth. The abdominal parietes were incomplete, the opening into the abdomen being about twelve or fourteen inches in diameter, when the body of this monstrosity lay on the floor. I then found the intestines attached to the calf, but reaching therefrom to the uterus of the cow. These I detached, and removed the heart, lungs, liver, kidneys, etc., of the calf from the uterus of the cow, where they were floating about quite unprotected, and completely detached from the calf. I ascribe this state of things, in some measure, to the force which had necessarily been employed to effect delivery, whereby, no doubt, these important organs were separated from their proper attachments. The calf appeared full-grown, the hoofs and hair adhering very firmly; the margin of the abdominal opening was destitute of hair. Both the fore and hind legs were deformed, independent of their position in regard to the curvature of the spine.

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## THE EMPLOYMENT OF ELECTRICITY IN DISEASE.

BY A. JONES., M.R.C.V.S., QUEEN'S BAYS, DUBLIN.

AN epizoötic of a typhoid character and a most depressing nature having attacked the horses in the Royal Barracks, Dublin, I was very anxious to try the effects of electricity on some of the cases, as the usual remedies I did not consider at all satis-

factory. I therefore put myself in communication with Mr. Grigg, an electrician, and to whose kindness I am indebted for the use of the electro-magnetic battery, and instructions as to his latest mode of application.

To afford a better idea of the cases to which the treatment was applied, I will give a few of the symptoms. The temperature ranged between 105° and 107°, and the pulse from 60 to 90. The mucous membranes were dark mahogany-coloured; there was great nervous and muscular prostration—so much so that the animal could scarcely stand. The pulse was intermittent to an extraordinary degree, and the heart throbbing violently; the eyes were partially closed, and the animal staggering about and falling down as if in an apoplectic fit. The bowels ceased to act, although there was a large quantity of ingesta in the rectum. In some cases there was partial paralysis of one or both hind legs.

The disease ran its course in a regular way. On the fourth day death occurred, and on that day the fever was at its highest point.

The remedies I used prior to the application of electricity were, Mag. sulph., Soda salicyl., Pot. nit., Soda hypo-sulph., Ol. tereb., Sp. ether nit., Liq. am. acet.

Two animals—well-marked cases—out of a number affected, were selected on the first day of illness for the application of electricity. They were placed under the treatment for one hour in the morning and one hour in the evening, daily. After the third application there was more regularity in the beat of the pulse, and a decrease in its number, also a diminution in the temperature. The bowels began to act, and the animals to feed. I considered this treatment most satisfactory, and especially as all the symptoms invariably increased in intensity to the fourth day, I therefore continued it; the result being that they made very rapid recoveries.

In nearly all fevers of this class, in which the temperature runs so high, and with a large addition of fibrine in the blood, some organ gets blocked, causing congestion, and sometimes inflammation, which leads to structural derangements, rendering the animal attacked not nearly so useful and often unsound; and I feel

confident that by the timely application of electricity, a disease can be so modified in its course that there will be a rapid and complete recovery, and consequently no organic change.

I cannot speak too highly of its effects. The animals fed and did not lose flesh, made rapid recoveries, and were able to work very soon; whereas cases not treated with electricity became so emaciated that they could not be used for months, and others became "roarers," etc.

Electricity appears to act by stimulating the nervous and circulatory systems, giving tone to the nerves and equalising the circulation, thus enabling nature to throw off the morbid poison of any specific disease.

Horses are quite quiet under the treatment, and appear to like it.

Any members of the profession wishing for more information regarding this new and successful treatment, I shall be glad to give it to them, as far as I am able.

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## THE ECRASEUR IN THE REMOVAL OF TUMOURS.

BY J. T. DIBBIN, M.R.C.V.S., 5TH LANCERS.

A TUMOUR situated deeply in the inguinal region of the right side of a troop-mare, thirteen years old, was first noticed about four years ago, at which time it was about the size of a hen's egg, and increased but little until October, 1879. I am of opinion that, prior to this time, it was a simple fibrous growth, but that from some cause (probably injury by getting over the bale, or in lying down), in October the tumour increased rapidly in size, assumed a malignant form, becoming very vascular, and softer to the touch, with a tendency to ulcerate. The mare was cast for the purpose of making a careful examination of the tumour, and removing it with the knife, if deemed advisable; but the mass was found to have such a large base in close connection with the arteries of the part, and had such large vessels supplying it, that it was decided to make incisions, with the view of sloughing the tumour away. This was done, but without the desired effect, for it continued to increase in size. The mare

having injured the tumour by lying on it one night, it was discovered bleeding profusely in the morning, and great difficulty was experienced in arresting the hæmorrhage. About this time Mr. Geo. Fleming, Inspecting Veterinary Surgeon, saw the mare, and kindly offered to operate on her, and remove the tumour by means of the ecraseur. On the 13th of January the mare was cast, placed on her back, and the hind legs tied well forwards and down to her sides, by means of a rope placed under her as she lay. A careful incision was then made through the integument at the base of the tumour, leaving skin enough to allow of sutures being passed through, and the wound closed after the removal of it; the loose connective tissue was broken down, and the mass enucleated as much as possible by the fingers, until the chain of the ecraseur could be got well round the base of the tumour—a spray of carbolised water being thrown over the part during the operation. Constriction was now applied by the chain of the instrument, and the enclosed structures slowly broken through. The wound was then cleansed, sutured with carbolised catgut, collodion applied over the surface, and the mare liberated. There was no hæmorrhage after the first incision was made through the integument. The sutures gave way the next day, and the wound suppurated. It was syringed with carbolised tepid water daily, and healed rapidly, the animal going to duty in a month. On examining the tumour after removal, it was found to weigh over four pounds; several cysts were discovered in the structure, filled with a serous-looking fluid. Sections examined under the microscope were found to be made up principally of cells, resembling cancer cells in every particular.

[We examined a very small portion of this tumour, and found all the appearances of a sarcomatous growth—embryonic connective tissue in extremely small proportion to the round cellular elements.]

# THE PATHOLOGICAL HISTOLOGY OF EPIZOÖTIC PLEURO-PNEUMONIA.

BY CHARLES S. ROY, M.D. LONDON, ASSISTANT AT THE PHYSIOLOGICAL INSTITUTE OF THE UNIVERSITY OF STRASSBURG.

(*Concluded from page* 181.)

THE branches of the bronchi which pass to the diseased region are more commonly affected than the accompanying vessels. The muscular coat and mucosa are occasionally found unchanged. but usually these tissues are the seat of cellular infiltration varying greatly in amount. The mucous lining of the air-tube is almost invariably more deeply affected than the muscular coat, The histological characters of the disease affecting the air-tubes, are in no important matter different from those of the other affected tissues which have already been described. The bronchial wall is swollen from the presence in its interstices of cell-elements and fibrinous exudation. This condition is illustrated by fig. IX. The cells in the less deeply affected parts are situated chiefly round the lymphatic follicles, which are swollen, with ill-defined margins. At parts where the disease is more advanced, the cells are more thickly scattered through the mucosa. They are often found crowded round the walls of the racemose glands, the cells of which may be unchanged in appearance, but are often, on the other hand, broken up and their place within the gland-tube taken by lymphoid cells. The epithelial lining of the bronchi is usually intact to all appearance, except at those parts where the superficial ulcerations of the mucous membrane which have already been spoken of are present. These ulcerations seem to result from the pressure on the tissue exercised by masses of cell-elements, or by a large amount of fibrinous exudation.

It was noted in treating of the macroscopic characters of the disease that, in one case, the posterior mediastinal connective tissue was found greatly swollen with gelatinous semi-fluid exudation. The examination of this with the microscope showed it to be identical in structure with that of the exudation between the lobules.

Having finished our description of the histology of the diseased

lung, we turn to notice the appearances found in the lymphatic glands which receive the lymph from the affected region of the lung.

On examining thin, partially-washed sections taken from the swollen glands, we find that situated in the *lymph-sinuses* are many of the epithelioid cells which have been described as occurring in other diseased parts. Such cells are not discoverable amongst the smaller cell-elements of the *lymph-cylinders*. In most specimens, the follicles of the cortical substance are found enlarged, their margins at the same time being more indistinct than usual. In some cases we find a thickening of the fine fibres that run across the *lymph-sinuses* from the trabeculæ to the *lymph-cylinders*, together with an increase of the nuclei which are seated at their nodal points. I am not, however, inclined to place much importance on this, for Dr. Klein informs me that he has observed a thickening of these fibres, and a moderate increase in their nuclei, in lymphatic glands which have been taken from perfectly healthy cattle ; besides which, although this appearance was very marked in some cases, it was altogether absent in other Pleuro-pneumonic glands. In those cases where the afferent lymph-vessels contained thrombi, the wall of the lymphatic was much thickened, its substance being flooded with young cells, the contained clot being usually also rich in cell-elements. In fig. x. a transverse section through such a lymphatic vessel is represented.

I have but little to add, in concluding this part of the report, concerning the few, and on the whole rare, changes which occur in the kidney and liver.

In the two cases where the kidney was affected, the histological characters of the diseased gland were the same in both instances. The changes found consisted in the presence between the tubules of the cortical substance, of lymphoid cells disposed irregularly, at some parts being massed together in large numbers and displacing or causing absorption of some of the tubules, while at other places groups of two or three cells were seen in the interstices between the tubuli. The tubuli themselves appeared unaffected. The disease occurred in scattered patches, some portions of the cortical substance being quite normal in

appearance. The medullary tissue in both cases showed no abnormality.

In the liver the small whitish masses were also due to the presence of leucocytes occupying the interstices of the tissue. They were most crowded at those spaces left by the rounded angles of neighbouring lobuli. At some parts they were found in the interior of the lobuli, the cells of which had in part disappeared.

At various parts of the diseased lung, appearances were found which seemed, at first sight, to be due to the presence of micrococci in clumps, situated chiefly in the interlobular exudation. The granules composing these little masses were nearly equal in size, and they took on the same colouration as micrococcous masses when the section was stained with logwood. None of them, however, resisted the action of caustic potash; nor, in spite of careful and systematic examination, have I in any single case been able to convince myself of the presence of micrococci or of bacteria in the diseased tissue. It is well known, from the observations of Klein and Ziegler, that micrococci may be thickly scattered through a tissue and yet be unrecognisable; seeing that, although the characters of these organisms when collected in masses are well enough defined, yet when scattered they escape our means of investigation. Such organisms may, therefore, be present in Pleuro-pneumonic lungs, though it is doubtful if we have good *a priori* grounds for believing them to be so.

The examination of the fluid exudation in the fresh condition has also invariably given negative results, in so far as the search for micrococci and bacteria was concerned.

## CONCLUSION.

In the foregoing pages I have confined myself to the description of facts concerning which there was scarcely room for difference of opinion; but I have not considered it advisable to finish my report without indicating a few of the more evident conclusions which may be drawn from the histological anatomy of the disease. As has been pointed out, we have here to do with a morbid process which presents many points of resemblance to simple inflammation of the lung. The marbled

appearance which is seen on section of the diseased lung-substance, and many other of the macroscopical characters are manifestly due, not to any peculiarity in the morbid process, but to the special conformation of the bovine lung. As we have seen also, in its histological characters the diseased tissue presents may analogies with that affected with simple Pneumonia. In so far as the changes in the alveolar substance are concerned, these, at some parts, copy so closely the appearances found in ordinary Croupous Pneumonia, that it would be impossible, from a simple examination of a section under the microscope, to say whether the specimen had been taken from a case of simple Pneumonia or from one of contagious Pleuro-pneumonia. And, in fact, many writers on the subject, *e.g.*, Roll* and Bruckmüller,† consider the disease to correspond exactly with the simple Pneumonia of other animals.

The changes in the alveolar tissue, however, in cases of Pleuro-pneumonia are characterised by their want of uniformity. We find at different parts of the same lung changes which, if they were uniform, would serve to distinguish the process as a croupous inflammation; at others, again, the characters of Catarrhal Pneumonia are those which predominate; elsewhere, the formation of cicatricial tissue makes Cirrhosis the striking feature; at still other parts, the rich hypertrophy of the smooth muscular fibres of the pulmonary parenchyma copies the Muscular Cirrhosis of Buhl; while, finally, the dense infiltration by young cells of the alveola walls, while the cavities of the air-cells are crowded with epithelial elements, gives an appearance identical with that found in cases of "Tubercular Pneumonia." So that *the absence of uniformity in the morbid changes found in the alveolar tissue serves to characterise the disease.*

It has been noted that the most usual condition of the diseased alveolar tissue is one in which the walls of the air-cells are more or less thickened and infiltrated with young cells. These cells, in so far as their appearance is concerned, differ in no particular from ordinary pus-corpuscles. We find them in great abundance everywhere through the affected mass, and they form indeed the

* Roll, *Lehrb. d. Patholog. in Therap. d. Hausthiere.* Wien, 1860.
† Bruckmüller, *Lehrb. d. Patholog. Zootomie.* Wien, 1862.

most striking feature in the morbid histology of Pleuro-pneumonia. Their life-history, however, is peculiar, and seems in great part governed, as might be anticipated, by the amount of nutrient fluid present in the tissue in which they are situated, and by the degree of intensity of the irritant factor whose presence is presumably the cause of their exudation or development. At some parts we find them forming cicatricial tissue, while at others they have broken up, leaving only slight traces of their former existence. The fact that so much fibrinous coagulum is present throughout the diseased tissue may, reasoning from Schmidt's observations, be taken as evidence that a large number of leucocytes have become disintegrated. But perhaps of more importance than the modifications which these cells undergo, is the absence in them of certain degenerative changes.

They frequently disintegrate, but they never show any traces of caseation, nor of mucous degeneration. This is especially noteworthy in the case of the enlarged lympathic glands, which never shew any tendency to caseation : a form of degeneration which is so common in them in other chronic inflammations of the lung. The cell-elements in Syphilis, in Glanders, in Lupus and in Tuberculosis, resemble in appearance the ordinary young cells found in cases of simple inflammation ; but they are distinguished in the case of each of the diseases mentioned by the changes which they undergo : in Syphilis it is the mucous degeneration ; in Tuberculosis it is caseation, etc., etc. ; and so also with the cell-elements in the case of Pleuro-pneumonia. *The cells which are found richly infiltrating the diseased tissue resemble in appearance those found in ordinary non-specific inflammation, but they are characterised by the changes which they undergo.*

The distribution of these cells in the interlobular exudation, and the peculiar manner in which they are grouped round the lymph-channels, serve also to distinguish the morbid process.

It is scarcely possible to discover in what manner the disease first commences, what tissue it first attacks ; seeing that it is practically impossible to obtain specimens at a stage of the affection sufficiently early for us to be able to elucidate this point by direct observation. For although, after the disease has made progress enough to enable a diagnosis to be made and the animal

is slaughtered, a given tissue may be more deeply or more extensively affected than another, that forms no sufficient ground for believing that in it the disease has first fixed its root. I cannot, therefore, understand on what Professor Yeo has based his assertion that the disease first attacks the mucous membrane of the smaller bronchi. It is, of course, probable enough that the disease does so commence, but one requires something more than a probability to serve as the foundation for a definite assertion of this kind. For my own part, I should imagine that the disease more probably first attacks the peribronchial connective tissue; but I should not feel justified in asserting it as a definite fact. As Professor Yeo's* investigations are by far the most important and interesting researches on the pathology of Pleuro-pneumonia with which I am acquainted, I believe that I cannot do better than quote, in his own words, the conclusions to which he has arrived. He says :—

To recapitulate then, the various items in the pathological sequence may be thus enumerated :

1. Irritation of the mucous membrane of the smaller bronchi, probably by some infective material (specific virus ?).
2. Chronic ulcerative Bronchitis, localised to a few smaller bronchi.
3. Occlusion of the affected air-tubes.
4. This produces such changes in the air-cells belonging to the affected tubes that the lobular parenchyma becomes solid.
5. As the bronchial disease progresses, the walls of the air-tubes become thickened and infiltrated with the products of chronic inflammation.
6. The peribronchial lymphatics are implicated by the extension of the infective process from the bronchus and are soon filled with dense exudation.
7. The block in the lymphatics of the broncho-vascular system impedes the flow of lymph from the corresponding territory.
8. The tributary lymph-channels are thus mechanically engorged and at the same time they are irritated by infective materials.
9. The inflammation of all the coats of the air-tubes gradually spreads towards the root of the lung.

As will have been gathered from the contents of the foregoing pages, it is impossible for me to endorse the views contained in this *résumé*.

It is difficult to draw absolute conclusions as to the later progress of the disease—as to what would result if the animals

* *A Report on the Pathological Anatomy of Pleuro-pneumonia*, by Prof. Gerald F. Yeo. London, 1878. Also, the VETERINARY JOURNAL, vol. vii., p. 28.

were allowed to live. That cure may result is asserted by various writers, and the method is supposed to consist in the affected part, which necessarily must not be of large extent, becoming dry, firm and bloodless, and being finally separated from the healthy lung-substance by a layer of cicatricial tissue. Cases not very rarely occur in which the lungs of cattle believed to be healthy are found, on their being slaughtered, to contain a firm, dry, encapsuled part into which neither blood nor air had penetrated, and which presents a well-marked marbled appearance on section. I have not been able to obtain any such specimen, nor have I found any published account of the microscopic appearances found on examination of the dried capsuled part, and cannot therefore be certain that it represented the remains of a healed Pleuro-pneumonic mass. The peculiar kind of dry gangrene which distinguishes what I have called the *third stage*, may very probably represent the first step towards this form of cure, which seems the only form that can take place when once the disease is fairly established in the pulmonary tissue.

The anatomical features of the disease which I have attempted to describe in the preceding pages are so sharply defined and so characteristic, as to leave no room for doubt as to the classification of the morbid process. It is a typical example of a "specific inflammation," or, as Klebs has proposed to name this class of diseases, of an "infection tumour." It takes its place naturally, therefore, beside Syphilis, Glanders, Tuberculosis, etc.

## EXPLANATION OF THE FIGURES.

FIG. IX.—Vertical section of mucous membrane of bronchus of second order.

*a.* Epithelium.
*b.* Mucous gland.
*c.* Muscular layer.
*d d d.* Young cells infiltrated at various parts of the tissue. (Obj. iv. Hartnack. Oc. No. ii.)

FIG. X.—Section through an afferent lymphatic vessel passing to a diseased lymphatic gland.

*a.* Thickened wall of lymphatic.
*b.* Coagulum in lumen of vessel.
*c.* Connective tissue swollen and containing a large number of young cells.
*d.* Artery cut across.

Fig IX

Fig X

# Editorial.

## THE WASTE OF TRANSPORT ANIMALS IN INDIA.

We have more than once referred to the reckless waste of animals occurring in the Indian transport department since the commencement of the Afghan war, and if we again allude to this subject, it is only from a desire to draw attention to the urgent necessity that exists for introducing a better system of management in that department; so that not only may its efficiency be increased (it is sadly in need of improvement), and the danger of catastrophes during war be obviated, but that the great expenses it incurs—excessive beyond measure, when compared with the services rendered—and the charges of ignorance and inhumanity heaped upon it shall no longer be deserved. The mortality among the camels at the commencement of the campaign was something appalling, and it may truly be said that the whole north-west of India has been swept of its cameline population for the transport service in Afghanistan, and that the large majority of these animals has perished. The immediate loss to the Government is, of course, immense, but the injury inflicted upon the regions whence these camels were obtained it is impossible to estimate. It is not too much to assert that many years will elapse before these districts will recover from the shock they have experienced through the abstraction of those animals upon which they so much depended for carrying on their trade.

It cannot be denied that much of the mortality among the camels was due to ignorance and mismanagement. The military authorities thought fit to dispense with veterinary advice and assistance, and purchased and managed the camels in their own fashion. Whenever this has happened—whether in India, Europe, or elsewhere—nothing but loss and disaster has followed. On this occasion, camels quite unsuitable for campaigning were sent on towards the Afghan frontier, and they soon succumbed, either from the physical defects with which they started—aggravated, of course, by mismanagement and starvation—or from diseases which their inherent weakness made them liable to. The reports as to the mortality among the camels are quite painful, if not disgusting. Very many of the poor creatures were scarcely a year old, others were pregnant, and many were in the last stage of senility.

Reports no less discreditable and painful reach us with regard to the ponies employed in the transport service. The commissariat, as usual, appears to have considered nothing but numbers in buying these animals; and apparently ignoring or knowing nothing of what constitutes efficiency, it has made a terrible mess, not only of the public funds, but also of the transport. The ponies have been bought entirely on the responsibility of the commissariat officers, and without seeking assistance from the veterinary department. The result is as might be expected, and as it was with the camels. The purchasing has been conducted in the most reckless manner, and miserable creatures—under-aged or worn out, in foal or incurably diseased, crippled and

deformed—have been sent up to the "front" to carry a load of something like two hundred pounds many miles a day, when they really could not do justice to themselves by carrying their own weight. The inevitable occurs in a very short time. One or two journeys on bad roads terminates the career of these poor brutes. Indeed, we are informed that many of them never reach the front; and one instance is adduced in which a number—some only a year old, others living skeletons—were bought by the commissariat officers, and could not proceed more than twenty miles beyond the place where they were purchased. We also hear of ponies suffering from Glanders being taken by these officers.

Nothing can be more lamentable or discreditable than the way in which the Afghan campaign has been conducted, so far as the transport animals are concerned; and until the higher authorities fully recognise the fact that nothing can be done without a well-organised and efficient transport, and that in the organisation and efficiency of that transport veterinary surgeons must necessarily play a very important part, we shall always have to record immense sacrifices of money and animal life, unpardonable cruelty to animals, and army corps unable to move a mile from their camps, or in danger of starvation or other disaster. Every year the services of veterinary surgeons are becoming more necessary in maintaining the health and efficiency of animals useful to man; but in warlike operations these services are deemed absolutely indispensable when these operations are under the direction of enlightened commanders. It is through neglecting to make full use of its veterinary department, that the Indian Government has incurred so much discredit in the transport organisation for the Afghan campaign. Will the lesson be taken to heart? It will well repay the Government to give the department more of its countenance and confidence, not only in the matter of transport, but in others which are quite as important.

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## CYSTICERCUS CELLULOSUS AFFECTING THE SKIN OF MAN.*

SCHIFF, of Vienna, gives an interesting account of a case of this extremely rare cutaneous disease. On various parts of the body of a strong man, of twenty-six years, were numerous tumours, varying in size from a pea to a hazel-nut. These tumours were situated *under* the skin, in the subcutaneous areolar tissue, and between muscles. They were themselves movable on their base, and the skin covering them was so over them. Their consistence was rather difficult to define, for they felt gristly, combined with elasticity. Their surface was invariably smooth, and conveyed the impression that there was a tolerably hard cyst-wall, rendered tense from over-distension. Excision enabled Chiari and Coskor to determine that the tumours were the scolices or larval forms of *Tænia solium*. The first tumour appeared a year previously, on the anterior margin of the right pec-

* Vierteljahresschrift für Dermatologie und Syphilis, 1879. Edinburgh Medical Journal, 1880.

toralis major, and then by degrees others showed themselves on different parts of the body. The man said that for about a year he had repeatedly eaten raw beef. Schiff thinks that some other accidental mode of introduction must have been active, since the larvæ of *Tænia solium* are never met with in oxen (?), but only those of *Tænia mediocannelata*, while the larvæ of the latter have not yet been observed in man. To strengthen this view, a strong anthelmintic brought away no segments of tapeworm. This patient also exhibited some curious nervous phenomena which are worth noting. Since the age of ten, when he had a severe attack of Typhus Fever, he suffered from a very intense tremor of the whole body, but especially in the upper limbs, presenting in course of years remissions and exacerbations. Besides this, synchronously with the appearance of the tumours under the skin, epileptiform convulsions came on with chronic and tonic spasms, affecting most severely the muscles of the nape of the neck, and preceded by an *aura epileptica*. Further, during the last year the patient often complained of uneasiness and pain over his whole body. The muscular tremor Schiff regards as a sequela of Typhus ; the uneasiness, pain, and recurrent epileptic seizures as identical with the symptoms of Cysticercus of the brain, as described by Griesinger, ceasing for the time when each individual Scolex became encysted, and thus lost its power of locomotion through the cerebral tissues—Schiff thinking with Lewin that thus the Cysticercus migrates, and not merely, as Griesinger believes, advances along the course of the blood-vessels.

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## HUMAN AND ANIMAL VARIOLÆ: A STUDY IN COMPARATIVE PATHOLOGY.*

BY GEORGE FLEMING, F.R.C.V.S., ARMY VETERINARY INSPECTOR.

(*Continued from p.* 266.)

WHAT we might call the *casual evidence* as to the non-identity between human Variola and Cow-pox, and their being two distinct diseases of a group, is still further increased by other facts which may be mentioned. The individuality of contagious maladies is, perhaps, never more strongly marked than when we find two affecting the same person or animal, and running their course concurrently, the various phases of one being passed through entirely independently of the evolution of the other. Such instances are far from infrequent in the practice of the physician and veterinary surgeon, and from my own experience I could relate several. But I refrain from doing so, as additional testimony of this kind is not required at this period of the nineteenth century, I hope. But in the discussion now undergoing consideration, such evidence should be borne in mind when we mention the fact, that cases are recorded in which people already infected with Small-pox, and who had been vaccinated when so infected, have had the eruptions of the two diseases apparent at the same time, each preserving its special characters, undergoing its different changes, and terminating exactly as if it were totally independent of the other, and had not the slightest influence in modifying or checking its course. And more than this, Hallé is reported to have employed the lymph from vaccine vesicles developed under these conditions, to vaccinate healthy children, and has only produced the pock of Vaccinia—never Small-pox. In one of Chauveau's experiments, in which a horse was inoculated with the virus of human Small-pox, which

* From the *Lancet* for March 20th.

gave rise to local effects, and was also inoculated with vaccine lymph, evidence of the two morbid actions operating coincidently was undeniable, and afforded one more proof that a certain lapse of time must ensue before the preservative influence of vaccination comes into play.

However strong and abundant clinical and casual evidence may be, it is not always completely convincing, unless supported by experimental demonstration, when it is then irresistible. This evidence is also fortunately at hand, and in a most exhaustive and complete form ; and it is very remarkable that, with the exception of one speaker at the conference (Dr. Cameron), its existence does not seem to have been known to those present ; at least, this may be inferred from the circumstance that it was never alluded to, save in the one instance mentioned. That my surmise is not very wide of the truth, may be taken for granted, when we read of one gentleman saying, in reference to the experiments conducted by my friend, Professor Chauveau, of the Lyons Veterinary School, and briefly summarised by Dr. Cameron, that "it seemed strange that men should, at the present time, go abroad to France, to the futile and speculative experiments of a Frenchman, and take possession of the inferences he entertained." Such language betokens either ignorance of, or an utter failure to appreciate, the value of the results of these experiments ; but then this speaker asserted that he had successfully inoculated a large number of cows with Small-pox virus, and produced Vaccinia which gave him abundant vaccine lymph.

In France, as in some other European countries, the origin of Cow-pox had long been a fruitful subject for discussion and speculation, and more than once it had provoked warm debates at the Paris Academy of Medicine. In 1863, M. Bouley, then director of the Alfort Veterinary School, had re-discovered at Paris the "Horse-pox" of Dr. Loy, of Pickering—in reality, the "Grease" of Jenner, Sacco, and others, who believed in the equine origin of Cow-pox. But M. Depaul, who had also, with Bouley, studied this *vaccinogenous* disease of the horse, was inclined to follow the example of Baron and his followers, and to conclude that it and all other eruptive disorders occurring in animals, and possessing analogous characters, were nothing more nor less than human Variola. So it was that he included Sheep-pox, and the aphthous disorder of animals known as Foot-and-mouth Disease, in the list of disorders having their common source in Small-pox. The influence which he and Bouley possessed divided the Academy into two camps, and the result was recourse to experimentation, which happily led to the conclusion that this equine eruption was capable of producing Cow-pox in the cow and Vaccinia in mankind. But the burning question as to the identity of Small-pox and the diverse varioliform affections of animals remained as undecided as before ; no new facts of a reliable kind were brought forward, and there was nothing to talk about save the well-known contradictory circumstances which had been so often alluded to before, but which were again brought into debate with all the oratorical ability and scientific ardour for which that renowned body is remarkable. Viewing it as a purely experimental matter, as a question which could only be decided by true facts, the Society of Medical Sciences of Lyons appointed a commission to carry out this inquiry. The commission was composed of Drs. Boudet, Delore, Dupuis, Gailleton, Horand, Lortet, Meynet, and Viennois, and the veterinary professor Chauveau. The latter was the president of the commission, and on him chiefly devolved the task of experimenting on the animals. A man more competent for the onerous duty imposed upon him could not be found in Europe ; his reputation in the world of medical science stands very high as a most accomplished physiologist and experimental pathologist, the results of whose experiments may be received as absolutely trustworthy. Drs. Viennois and Meynet were secretaries, and the three

drew up the final report, which was presented in 1865. On March 5th, 1866, the French Academy of Sciences awarded the Montyon prize, value 2,500 francs, to Chauveau and his two colleagues, Viennois and Meynet, and gave honourable mention to the other members of the commission. This award was made on the recommendation of a commission appointed by the Academy, and constituted by such men as Claude Bernard, Serres, Velpeau, Cloquet, Joubert, Flourens, Rayer, Milne Edwards, and Longet, who gave their opinion as to the great interest and value of the Lyons investigations. This commission, aware that the medical profession had been divided in opinion as to whether, if human Variola were inoculated on the cow, it could be so modified as to produce true primary Vaccinia, or whether Variola was so foreign to the bovine species that its inoculation in cattle was impossible, alludes to the ability of Chauveau, and to the results of his labours, which demonstrated that the truth lay on neither side. These results proved that human Variola could be inoculated on the cow and horse with the same certainty as Vaccinia ; but they also showed, contrary to what takes place in the human subject, that the primary effects produced by inoculation with the two viruses were absolutely different. Thus, with the ox, the Small-pox virus only determines a local eruption of papules, often so small that they would pass unperceived if one were not warned of their existence. Hence the mistake made by some experimenters, who have denied that Small-pox could be inoculated on bovines. The vaccine virus, on the other hand, engenders the typical pustular eruption, with its large characteristic *boutons*.

Analogous differences are observed, continue the Academy commissioners, on animals of the equine species. These differences are still more manifest in the same animal inoculated simultaneously with the two viruses : the two eruptions are then developed simultaneously without appearing to influence each other, and preserve their special characters. But the two viruses are not less capable of acting one on the other, and so reciprocally neutralising each other—just as in man—when inoculated successively on the same animal. In fact, human Small-pox generally fails on vaccinated animals, while the vaccine virus as commonly fails on those which have been previously submitted to variolous inoculation. In no case had Chauveau and his colleagues seen the slightest tendency to *rapprochement* between the characters of the two eruptions in the horse and ox. In attempting to cultivate the variolic virus on these two species, they have even discovered that it cannot become acclimatised in them, and that, with the ox in particular, it becomes impotent at the second or third generation ; while the vaccine disease is propagated indefinitely from one individual to another. With regard to the inoculation of man with this variolic virus which had been transiently (*passagèrement*) implanted in the organism of animals, this only engenders Small-pox, neither more nor less, just as does the variolous virus obtained direct from the human species. The eruption is sometimes discrete and benignant, sometimes confluent and serious—at times normal, at other times abnormal. But in all cases the disease preserves its property of infecting healthy individuals by miasmatic contagion (infection) ; and its virus, even when taken from an almost absolutely local eruption, never gives more, in bovine animals, than the papular eruption which ordinary human Variola produces in these creatures.

The Academy of Sciences commissioners conclude their verdict as follows :—" The experiments, the results of which have been just mentioned —experiments as remarkable by their number as by their distinctness (*netteté*) and concordance—appear, therefore, proper to solve the debatable points in view of which they were instituted. In establishing that Vaccinia and Variola, notwithstanding the features which assimilate them in animals as in man, are, nevertheless, totally independent of each other ; that their

viruses form two distinct individualities ; that the two affections thus constitute two different, immutable species, which cannot be transformed one into the other ; that, consequently, to seek to produce Vaccinia from Variola would be to pursue a dangerous chimera, which would revive all the dangers of inoculation of by-gone days—in establishing facts of such great importance, the experiments directed by M. Chauveau have rendered an incontestable service to science and to medical practice."

Such was the opinion expressed by the representatives of the Academy of Sciences with regard to the Lyons experiments, and after reading the account of them, and knowing well the very trustworthy character and great professional ability of M. Chauveau, I think no doubt whatever can be entertained as to the justness of that opinion. And, besides, it must be remembered that an Italian medical commission, which carried on similar experiments and investigations at Turin, from 1871 to 1874, came to the same conclusion that Chauveau did—that human Small-pox cannot be converted into Cow-pox when the virus is transferred to bovines, but always preserves its original character.

The advantages and opportunities the Lyons commission could avail themselves of were very great. The magnificent veterinary school of that city was placed at their disposal, with as many horses as they required for experiment, as well as lodging and food for the other numerous animals they employed in their investigations. The 160 cows and bulls, and 40 pigs, at the Imperial Agricultural School of Saulsaie, were at their service ; as well as about 100 cows and numerous sheep and goats at a large farm near Lyons. For experiments on the human species, the *service des vaccinations* at the Hôpital de la Charité, presided over by Drs. Berne and Delore, as well as a member of the commission—M. Horand—was made available. The experiments were conducted with the greatest care and deliberation, and were very numerous ; the observations on them were drawn up by Dr. Horand. They were divided into two orders or sets ; one order of experiments with vaccine virus, another with that of human Small-pox. Each of these again was arranged in series, and each experiment in the series is described in detail in the report.

The Variola experiments are those which have most interest and importance for us, so far as the identity of Small-pox and vaccination are concerned ; though those with Vaccinia have a more or less direct bearing on these, as well as on animal vaccination. More especially is it necessary to refer to the results of the first group, in order to refute the statement made at the London conference, that the Small-pox matter was merely deposited in a little pouch in the cow's skin, and then re-transferred to the human subject, to whom it gave Small-pox. Quite cognisant of what had already been achieved in this direction, the greatest circumspection was observed in guarding against fallacious conclusions ; and the perfect knowledge possessed by Chauveau of the nature and habits of animals, their structure and diseases, as well as of experimental methods, was certainly an advantage of which few, if any, previous investigators could boast.

In order to study Variola inoculated on the bovine species, twelve animals were selected which were known not to have had Cow-pox. Of these, nine were cow or bull-calves, two were recently-calved milch cows, and one a six-year-old pregnant cow. They were all inoculated with Small-pox matter, between December and April, the material being obtained from four people affected with Small-pox, and who had never been vaccinated ; it was always employed very fresh. The inoculations were made at the vulva in the females, and perineum and scrotum in the males, and exactly in the same way as in vaccinating—the punctures being sometimes sub-epidermic, at other times quite subcutaneous. In none of the animals were there observed

the slightest general phenomena—no disseminated eruption, fever, loss of appetite, or diminution of the lacteal secretion. With regard to the local phenomena, they were so trifling that in a first series of experiments they were inappreciable ; hence the error of some of the preceding experimenters, who concluded that cattle could not be successfully inoculated with Small-pox virus. But other experiments proved this to be a fallacy ; and a drawing accompanying the report shows the perineal region of a bull-calf, on the left side of which five sub-epidermic variolous inoculations had been made, and the effect of which had arrived at its *summum* of development. There were small, red, slightly-prominent papules, from two to four millimetres in diameter, and slightly conical, in the centre of which the inoculation-puncture could be distinguished. These papules commenced to develop on the second day, and on the fifth had arrived at the dimensions shown in the drawing. On the twelfth day they had completely disappeared, after furnishing at the seat of puncture, an extremely small, darkish crust. This course was not observed, however, in all the twelve inoculated animals ; but it was remarked that the deep punctures did not furnish more evident results than the sub-epidermic ones. The former, though made with a cannulated needle highly charged with virus, only gave rise, indeed, to an eruption in which the papules were not so red or circumscribed as in the latter, and frequently could only be distinguished in the skin by passing the finger over them. Some deep inoculations were made by passing the virus through a wound several millimetres in extent, made by a lancet. The results were no more marked.

(*To be continued.*)

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# Proceedings of Veterinary Medical Societies, etc.

## ROYAL COLLEGE OF VETERINARY SURGEONS.

### Meeting of Council, held April 9th, 1880.

The President in the chair. Present :—Professors Walley and Pritchard ; Sir F. Fitzwygram ; Messrs. Blakeway, Taylor, Reynolds, Greaves, Freeman, Anderton, Gowing, Whittle, Dray, Moon, Batt, Fleming, Morgan, Harpley, Cartledge, G. Williams, Cartwright, and the Secretary.

The minutes of the last meeting were read and confirmed.

The Secretary read a letter from Professor McCall, regretting his inability to attend the meeting ; also a letter from Mr. John Roalfe Cox, acknowledging with thanks the honour of his election as a member of the Court of Examiners.

The Secretary announced that Gen. Sir Frederick Fitzwygram had presented to the museum some specimens of grasses, which had been classified and arranged by Dr. Cobbold.

On the motion of Mr. Dray, seconded by Professor Walley, a vote of thanks was accorded to the donor.

Mr. Fleming presented to the museum a fractured os coronâ of a pony, and some amphistomes from the stomach of a horse, received from India.

On the motion of Mr. Dray, seconded by Mr. Gowing, a vote of thanks was accorded to Mr. Fleming for his presentation.

A letter was received from a chemist residing in Boston, Lincolnshire, accompanying some specimens of œgagropiles, said to be from the stomach of a ewe sheep.

On the motion of Mr. Cartledge, a vote of thanks was awarded to the donor.

The Secretary announced that a letter had been received from Sir James

Gell, Attorney-General, Castletown, Isle of Man, in which he expressed a wish to be furnished with a register of qualified members; and that a copy of the register had been sent to him accordingly.

The SECRETARY also intimated that a long letter had been received with reference to the sale of poison. Some conversation arose on this subject, and it was considered that it had more reference to the Royal Pharmaceutical Society than to the Royal College of Veterinary Surgeons.

On the motion of Mr. REYNOLDS, seconded by Professor PRITCHARD, it was resolved to refer the subject to the Royal Pharmaceutical Society.

*The Retiring Secretary.*

Mr. DRAY, referring to the retirement of Mr. Coates, said that, after his long services as Secretary, which had been very faithfully performed, and looking to the high moral integrity characterising Mr. Coates, he would propose that £30 be granted to him annually for the term of his life.

Mr. FLEMING said he had great pleasure in seconding the motion.

Mr. GOWING explained that Mr. Coates's salary was £150, and that the salary of the new Secretary was fixed at £120; according to this arrangement therefore, he thought that the pension for the retiring Secretary could be amply provided for.

Mr. MORGAN questioned whether it would be legal for the Council to grant an annuity. He had nothing to say, except in favour of Mr. Coates and the manner in which he had performed his duties; but it would be dangerous to establish a precedent such as was now proposed.

Mr. DRAY said he was quite willing to modify his resolution. If the Council thought proper to grant a sum annually, he would be quite willing to agree to it.

Mr. FLEMING pointed out that there was nothing in the charter to prevent the Council granting an annuity. It rested with the Council whether it should be an annuity or an annual grant. Perhaps it would be safer to make it an annual grant.

Mr. HARPLEY suggested that it would, perhaps, be better to make a grant to Mr. Coates at once of a hundred guineas, by way of bonus. He merely threw out that suggestion for discussion. He had a desire, as he had no doubt the other members of the Council had, to do something for the benefit of Mr. Coates on his retirement, considering that he had served them so well.

Mr. MORGAN seconded Mr. Harpley's proposal.

Professor WALLEY said he was anxious that something should be done in recognition of Mr. Coates's services, but if he were granted an annuity of £30, the new Secretary would stand no possible chance of improving his position as time went on.

Mr. FLEMING pointed out that a hundred guineas was a very small sum to award to the Secretary, considering his long services.

Mr. GOWING said that he would willingly hold up his hand for £500; but the question was, whether or not the Council could afford it.

Mr. P. TAYLOR thought that long and faithful services were worthy of recognition. He wished to ask on what ground the late Mr. Gabriel had a gift, and whether it was annual; and he should like to know whether Mr. Coates would wish a certain sum presented to him at once, or whether he would desire an annual presentation.

Mr. DRAY pointed out that, for some years, Mr. Coates performed the duties of Secretary at only £100 a year. This, he thought, ought to be taken into consideration in considering what remuneration the Council should give to Mr. Coates on his retirement.

Mr. HARPLEY deprecated taking the allowance to the retiring Secretary from the salary of the incoming one. On the last occasion it was an annual vote, and not a vote for life.

Sir F. FITZWYGRAM thought the feeling of the Council seemed to be in favour of an annual grant to the Secretary ; but he suggested that counsel's opinion should be taken whether the Council could legally make such grant.

The PRESIDENT then put Mr. Harpley's amendment, "That the sum of one hundred guineas be given to Mr. Coates on his retirement."

On a show of hands being taken, four voted for the amendment.

The PRESIDENT then put the motion, "That the sum of £30 per annum be given to Mr. Coates for his long services, if such a grant can be made legally."

The motion was carried.

Mr. COATES, the retiring Secretary (who had been absent during the discussion), was called in and apprised of the result. He expressed his gratitude for the kindness shown to him by the Council, and said that they had granted to him more than his past services gave him any right to expect.

Letters were read from several applicants for the post of Secretary ; and a report was read from the committee appointed to consider the subject, recommending the appointment of Mr. Arthur Wm. Hill. On the motion of Professor WALLEY, seconded by Mr. GOWING, the recommendation of the committee was agreed to.

Mr. DRAY said, that in severing the connection of the Council with Mr. Coates, they ought not to separate without giving an unanimous expression of their approval of his long and faithful services ; and he begged to move a resolution to that effect.

Mr. GOWING seconded the motion, which was supported by Mr. GREAVES, and carried unanimously.

Mr. HILL, the new Secretary, was called in and informed that he had been elected by the Council. He briefly returned thanks for his election.

### *Royal Agricultural Society.*

The SECRETARY read the following report in reference to the examinations in connection with the Royal Agricultural Society.

*To the President and Council of the Royal College of Veterinary Surgeons.*

GENTLEMEN,—We have the honour to report that the examination for the prizes offered by the Royal Agricultural Society took place on Thursday, the 22nd inst., at the Islington Cattle Market and the Royal College of Veterinary Surgeons, 10, Red Lion Square.

Six candidates were eligible for competition. Of these, one declined ; one, in consequence of the regiment in which he holds his appointment having been removed from Aldershot to Leeds, did not receive his notice until too late, and one sent no reply.

Three presented themselves, and these having afforded such proofs of their practical acquaintance with the subjects brought under their notice, we adjudicate the prizes in the following order :—

| | | | |
|---|---|---|---|
| 1st prize | . | William Alston Edgar | . 1,000 marks. |
| 2nd „ | . | William Frank Smith | . 875 „ |
| 3rd „ | . | Nicholson Almond | . . 735 „ |

out of a maximum of 1,200 marks.

It is a subject for great regret that the liberal inducements offered by the Royal Agricultural Society have not been more appreciated by the recent graduates of the profession ; possibly this may in some measure arise from the expenses occasioned by a journey to London, and we should therefore suggest that some allowance for travelling expenses might overcome the difficulty.

(*Signed*) THOS. WALTON MAYER.
D. GRESSWELL.
WM. DUGUID.

*Jan. 23rd*, 1880.

The PRESIDENT said that in connection with this matter he had called on Mr. Jenkins, the Secretary, and he was agreeable to do all he could to further the arrangements between the Highland Society and the Royal Agricultural Society. He had also called on Mr. Menzies, in Scotland, and he believed that the matter was now before the committee of the Highland Society. He expected that before the next meeting some arrangements might be made.

Mr. HARPLEY said he had attended a meeting of the Royal Agricultural Society, and he was sorry to say, from what he had observed, that the scheme had for the present broken through.

The SECRETARY reported that at a special meeting of the Court of Examiners for the Fellowship Degree, held February 7th, 1880, the candidates present underwent their examination and were admitted Fellows of the Royal College of Veterinary Surgeons.

At a meeting of the Court of Examiners for the Pass Examination, held on March 30th, March 31st, and April 1st, thirty-three candidates were passed, and one was rejected.

At a meeting of the Court of Examiners for the Second Examination, held April 2nd, 3rd, 5th, and 6th, thirty-one were passed, and seven were rejected.

At a meeting of the Court of Examiners for the First Examination, held April 7th and 8th, fourteen candidates were passed, and seven rejected.

A question arose as to the qualifications of one of the candidates, Mr. Simmons.

After some discussion, it was arranged that the medical diploma of Mr. Simmons's qualifications should be obtained through one of the schools.

The SECRETARY stated that twenty-two candidates holding the Highland and Agricultural Society's certificate had paid the required fee, and a list of names had been submitted to the Principals of different schools; and he asked for the sanction of the Council that these candidates should obtain the diploma of the Royal College of Veterinary Surgeons.

The sanction was granted.

The SECRETARY said that he had received three certificates, dated April 7th, 1880, from the Principal of the Edinburgh Veterinary College, of candidates holding the Highland and Agricultural Society's Certificate, and proposing to remit the fee of seven guineas to the Royal College of Veterinary Surgeons. It was agreed that the three applicants should be admitted as members of the College.

On the application of the Secretary it was agreed that 200 diplomas be printed before July.

The obituary notice was read.

Mr. DRAY referred to the death of Mr. Cuthbert, one of the members of Council, and proposed that a letter of condolence be sent to Mrs. Cuthbert and family, sympathising with them in their bereavement.

Mr. P. TAYLOR seconded the motion, which was carried unanimously.

The SECRETARY read a letter from Prof. McCall, in which he asked, with reference to Mr. Crozier's examination, whether the first half of his examination under the old rules would be accounted to him, or whether he would have to stand a first, second, or third examination.

The PRESIDENT said that if the applicant failed under the old rules he must commence *de novo*.

The SECRETARY stated that a letter had been received from Mr. Glover, Veterinary College, Camden Town, stating that in consequence of illness he was prevented from coming up for examination in January last. He was told he could not come up again until the following Christmas, which he considered a great hardship.

It was decided that unless a certificate was sent from the Principal of the veterinary college in which Mr. Glover had been educated, he should go up in July.

The SECRETARY announced that a letter had been received from Dr. Dunsmure, asking to be furnished with the requisite diplomas and papers for examination commencing April 9th, and that they should be extended to the 14th, 15th, 16th, 19th, and 20th.

The SECRETARY intimated that the diplomas had been sent.

The SECRETARY announced that a letter had been received from Mr. Moore, dated the 3rd of February, 1880, in answer to a letter from the President of the Royal College, in which the writer stated that the letter had been laid before the Practitioners' Committee, and that they considered it a most evasive answer to the requisition to call a meeting in the rooms of the Royal College.

Another letter, dated April 2nd, referring to the same subject, was read from Mr. Moore.

A letter was read from Mr. J. C. Rutherford, asking his name to be entered as a candidate for the Fitzwygram prizes, if not too late.

Sir F. FITZWYGRAM said that as soon as he knew the date of the Scotch Examinations he would fix the date for the Examinations.

*Finance Committee.*

The vouchers and receipts for payments during the preceding quarter were examined and found correct. The present liabilities amounted to £1 10 18s. 7d., which the Committee recommended should be discharged.

*New Register.*

The SECRETARY asked permission for a new Register to be printed, so as to include the new members of the profession.

On the motion of Mr. FLEMING, a committee, consisting of Mr. Collins, Mr. Harpley, and Mr. Fleming, was appointed to look into the matter prior to the new Register being printed.

*The Annual Report.*

The President and Mr. Dray were appointed, with the Secretary, to draw up the annual report.

Mr. Batt and Mr. Banham were appointed auditors.

The SECRETARY read a list of names that had been proposed as members of Council.

A new financial journal was ordered to be purchased.

Mr. FLEMING moved a resolution, of which he had previously given notice, "That steps be immediately taken by the Royal College of Veterinary Surgeons to obtain an Act of Parliament for the protection of the title of veterinary surgeon, or other titles conferred by Royal Charter." Mr. Fleming reiterated his views in regard to the motion, which views he explained at length on a former occasion.

Professor WALLEY seconded the motion, and in doing so expressed his entire concurrence with the ideas set forth by Mr. Fleming.

Mr. GREAVES and Mr. BLAKEWAY supported the motion, which, on being put to the vote, was carried.

This concluded the business of the Quarterly Meeting.

A SPECIAL MEETING

was afterwards held.

Sir FREDERICK FITZWYGRAM brought forward a motion which, he said, was not carried at the last special meeting in consequence of there not

being a quorum. It was for the purpose of amending the rules in relation to the appointment of scrutineers. It was felt desirable to appoint the scrutineers prior to the meeting, so that, after their business was finished as scrutineers, they could take part in the transaction of any subsequent business. His proposal was to expunge the words that required the scrutineers to be appointed at the General Meeting, and to add, "At the meeting prior to the Annual Meeting, the Council shall choose from among the members of the profession not less than six persons, to act as scrutineers in the election of members of the Council."

Mr. WHITTLE seconded the motion.

On the motion of Professor PRITCHARD, seconded by Mr. REYNOLDS, and supported by Professor WALLEY, an amendment was carried, to the effect, "That the scrutineers be the first parties to deal with the voting papers."

Sir F. FITZWYGRAM observed that this would throw a great burden on the scrutineers, and that he did not see the slightest objection to the Secretary arranging the papers.

Mr. FLEMING, on behalf of Mr. Collins, brought forward a motion for the amendment of a bye-law, submitted on a former occasion, to enable veterinary surgeons abroad to vote for members of Council at the annual meetings. He explained that Mr. Collins did not wish the motion to be put that evening; and he would move, in accordance with Mr. Collins's wish, "That a small committee be formed to take into consideration the best means for enabling the members of the profession who are abroad to vote for members of Council."

Mr. WHITTLE seconded the motion, which was carried.

A committee, consisting of the President, Sir Frederick Fitzwygram, and Mr. Fleming, was then appointed to carry into effect the spirit of the resolution.

Mr. FLEMING then moved the adoption of the following resolution, which he said had been discussed some months ago, viz., "That in case any student, after having attended the prescribed course, is prevented by any cause —the fault not being his own—from presenting himself for the first or second examination, he shall, after having passed that examination, be allowed to present himself for the one immediately following, by studying one term less than he would by the Bye-laws 31 and 32, provided the full number of terms shall have been complied with."

Professor WALLEY seconded the motion, which was carried.

Mr. FLEMING then moved a new bye-law, "That no student receive the diploma of the Royal College of Veterinary Surgeons until he shall have attained the age of twenty-one years." He explained that the effect of the bye-law would be that no student could receive a diploma unless he was twenty-one years of age, and gave his views on the subject to the same effect as he had given them at a previous meeting of Council.

Mr. WHITTLE seconded the motion, which was opposed by Mr. P. TAYLOR and Professor WALLEY.

Mr. TAYLOR moved an amendment, and Professor WALLEY seconded it, "That no student shall receive the diploma of the Royal College of Veterinary Surgeons until he shall have attained the age of twenty years."

The motion and the amendment were put to the meeting, when fourteen voted for the amendment, and four for the motion. The amendment was therefore declared carried.

Professor WALLEY moved certain alterations in Bye-laws 32, 33, 35, and 47; but after discussion, amendments were carried, allowing the bye-laws to remain as they were at present.

The proceedings then terminated.

SPECIAL MEETING OF THE COUNCIL, HELD 16TH APRIL.

In the absence of the President, E. C. DRAY, Esq., Vice-President, took the chair.

Present:—Professors Pritchard and Axe; Messrs. Batt, Coates, Collins, Dray, Morgan, Proctor, Williams, and the Secretary.

The SECRETARY stated that letters expressing regret at their inability to attend the meeting had been received from Mr. P. Taylor, Mr. Whittle, and Mr. Moon.

On the motion of Mr. MORGAN, seconded by Professor PRITCHARD, the amended Bye-law No. 7, proposed by Sir Frederick Fitzwygram, was confirmed in accordance with the provisions of the charter.

On the motion of Mr. MORGAN, seconded by Mr. BATT, the new "Bye-law," to follow No. 32, proposed by Mr. Fleming, was also confirmed, in accordance with the provisions of the charter.

The SECRETARY announced the receipt of a letter from Mr. C. A. Green-Armytage, Durban, Natal, acknowledging the arrival of a certificate in lieu of his original diploma, which he had lost.

A letter was read from Major-General Sir Frederick Fitzwygram, fixing May 4th for the competition for his prizes, the examination to be held, as usual, in London and Edinburgh.

A letter was read from Mr. Archer, who stated that he had passed his first examination, and requested to be informed whether he must attend both a summer and a winter session to be eligible for the second examination next April.

The subject was directed to be referred to the Principal of the Royal Veterinary College.

The SECRETARY read the draft annual report.

On the motion of Mr. BATT, seconded by Mr. COLLINS, the report was received.

Mr. COLLINS asked if it was intended to act on the resolution passed at the last annual meeting, and circulate the report prior to the next annual meeting.

Mr. COATES said it was intended to act in accordance with that resolution.

Mr. AXE said he doubted whether that was a matter with which the annual meeting had power to deal.

Professor PRITCHARD said the distribution of the report entailed expenditure, and therefore was solely a matter for the consideration of the Council. The annual meeting could only make a suggestion to the Council.

Mr. COLLINS said although no formal resolution had been passed by the Council in regard to this matter, the decision of the annual meeting had been tacitly accepted by the Council.

Mr. AXE thought that nothing should be taken as accepted. It ought to have come before the Council.

Mr. COLLINS moved "That the report, including the Treasurer's annual balance sheet, be adopted."

Mr. WILLIAMS seconded the motion, which was agreed to.

Professor PRITCHARD moved, and Mr. AXE seconded, "That the annual report be printed and circulated with the voting papers."

The resolution was agreed to.

The SECRETARY stated that letters had been received from Professor Williams and Professor McCall, nominating scrutineers for the annual meeting. Professor McCall nominated Mr. Archibald Robinson, Mr. Robert Mitchell, and Mr. Wm. Anderson; Professor Williams nominated Professor Vaughan, Mr. R. Rutherford, Mr. E. Grey, Mr. Reekie, and Mr. C. Cunningham.

Mr. COATES said he had written to the Principals of the three Scotch schools, asking them to nominate some gentlemen resident in Scotland who would officiate as scrutineers at the annual meeting.

On the motion of Mr. COLLINS, seconded by Professor PRITCHARD, the eight gentlemen nominated were appointed scrutineers.

The SECRETARY read the House Committee's report, which, on the motion of Mr. AXE, seconded by Mr. PROCTOR, was received.

Mr. AXE said he should be glad to contribute interesting specimens to the museum if the College would provide the necessary cases and accommodation.

Mr. COLLINS said he thought that a proposal to provide cases was agreed to months ago.

Mr. COATES said Mr. Harpley did propose such a resolution, and it was carried, but in consequence of the proposed removal to Fitzroy Square, the matter remained in abeyance. As a member of the Council, he would move that a sum of money not exceeding £50 should be laid out for the improuement of the museum.

Mr. COLLINS thought that a detailed estimate of the cost should first be prepared.

Mr. AXE suggested the appointment of a Museum Committee. At present there were no specimens by which students could be examined.

On the motion of the CHAIRMAN, seconded by Mr. BATT, a Museum Committee was appointed, consisting of Messrs. Axe, Pritchard, and Fleming, with instructions to prepare an estimate of the necessary outlay.

On the motion of Mr. AXE, seconded by Mr. COLLINS, the House Committee's report was adopted.

A cheque was ordered to be drawn for £12, to meet the costs of fixtures, etc., paid by the retiring secretary.

Mr. COATES said he had about twenty guineas in hand, consisting of fees paid by the Highland and Agricultural Society's members. He wished to know whether he should pay the money to the Treasurer or to the bankers.

It was decided that it should be paid into the bank.

A vote of thanks to the Chairman was proposed by Professor PRITCHARD, seconded by Mr. AXE, and agreed to.

## SCOTTISH METROPOLITAN VETERINARY MEDICAL ASSOCIATION.

THE annual general meeting of this Association was held in the London Hotel, Edinburgh, on February 11th. Mr. Connochie, M.R.C.V.S., Selkirk, President for the current year, occupied the chair, and there was a fair attendance of members.

The SECRETARY submitted a report as to the state of the society's funds and membership, which was adopted.

Some discussion took place concerning the advisability of taking united action at the next election of members to the Council of the Royal College of Veterinary Surgeons. Ultimately it was agreed that the Association should take no action in the matter.

Mr. RUTHERFORD, Edinburgh, described a case of puncture of the bowel for Tympany, successfully performed on a half-bred harness horse. Mr. Rutherford also mentioned some cases of dumb Rabies which had recently come under his notice.

The SECRETARY stated that he was quite prepared to hear of an outbreak of Rabies in Edinburgh, as some time previously a dog affected with the

malady had been brought to the Veterinary College, and it was stated by the owner that it had bitten a great number of dogs.

The PRESIDENT then proceeded to deliver his inaugural address as follows :—

Gentlemen, on taking the chair on this occasion, I beg to thank you for electing me President of the Association for the year, and to assure you all how highly I appreciate the honour you have conferred upon me. I earnestly hope that the Association may have no retrogressive movement during my term of office. In taking a retrospect of the history of the Association since its inauguration, it cannot but be a source of regret to every member, that so little real good work has been accomplished, and that so few of our surrounding professional brethren have seen their way to join us. I frankly admit that circumstances have prevented me from being so regular in attendance at the meetings lately. This I have always regretted, because I can assure you that every meeting I have attended I have been amply repaid for any loss of time or any trouble I may have been put to. But living at a distance of between forty and fifty miles from Edinburgh, and having professiona work to attend to, it is absolutely impossible to attend every meeting. We have all been somewhat remiss in this respect. Let us resolve that this shall be so no longer. But by more regular attendance at the meetings, by inducing others to join us, and by recording cases of interest, we may make the Association second to none in the kingdom, and worthy of the name of the Scottish Metropolitan Veterinary Medical Association. In making choice of a subject on which to make a few remarks on the occasion of my occupying this chair for the first time, and which might be of interest to the members, I have fixed upon the disease termed Rheumatism. I have been influenced in choosing this subject from the fact of it having occurred more frequently in course of practice, and also because I have had rather painful experience of it myself, having suffered from it, both in its acute and chronic form, since the beginning of November last.

The word Rheumatism is of Greek derivation, meaning to flow, or a fluxion, and belongs to the humeral school of pathology, and is a specific constitutional disease, supposed by some to be due to excess of lactic acid in the blood. Rheumatism has engaged the attention of many eminent men in the medical profession from a very remote period ; but it is only of comparatively recent date that it has been taken notice of by any author in veterinary science ; in fact, it is denied by some that it ever exists as a disease among our domestic animals. Those veterinary surgeons who have been for any length of time in practice without meeting cases of rheumatic disease in all its forms, must be very highly favoured ; truly their "lines have fallen in pleasant places." As it is one of those diseases upon which climatic changes exert a powerful influence, it follows as a sequence that it will be of greater prevalence in some districts than in others. Yet I doubt much if there is any district, in this country at least, that is altogether exempted. I may here mention that cases of it occurring in my practice amongst horses are very largely on the increase. I attribute this to the indiscriminate denuding of horses of their natural covering, at all times and seasons, since the introduction of horse-clipping machines. I am of opinion that, as a rule, no horse should be clipped between the 1st of December and the 1st of April.

Since the fact became known that the fibro-serous structures of the heart are so liable to become affected by Rheumatism in the acute form, causing such structural change and functional derangement, the study of the disease, as to its nature, has received very much additional importance. And this is not to be wondered at, when it is considered that it is upon the structural soundness and healthy action of this vital organ that the existence and usefulness of the horse depends. Rheumatism is a disease which affects all the

fibro-serous textures of the system, and is met with in two forms, which are distinguished as the *acute* and the *chronic*. The first symptom of the acute form is awkward gait, with unwillingness to move, generally accompanied with shivering and staring coat. At this time the pulse may be natural, but frequently languid, with little or no alteration of temperature. By and by the pulse quickens, the respirations become accelerated, and the temperature rises to 104° or 105°. I have met with a case when it rose to 107. The animal will now assume a position very characteristic of this disease—viz., one fore-leg pointed, and one hind one knuckled over at the fetlock joint. In the neighbourhood of the joints will now be observed hot, puffy swellings ; and the tendonous part of the muscles in the region of the afflicted joint can be traced to the muscular structure. The joints most liable to become affected in animals are the knees, fetlock, hocks, and stifle joints. It is seldom that we meet with all these affected at the same time ; but it will be noticed, if one hock or stifle becomes affected, the corresponding joint on the opposite side will soon show signs of being implicated, and in proportion to the extent and tensity of the swellings will be evinced the degree of pain the animal is suffering. The pain is seen to be excruciating on the slightest handling or movement of the affected part. The pulse at this stage is hard and full, and the temperature about 103° or 104°. There is also profuse perspiration, which has not the effect of relieving pain or reducing fever. The bowels are generally constipated, and the urinary organs are in a very torpid or inactive condition. If the urine is collected and allowed to stand for a time, though clear or straw-coloured at first, it will be found when cold to have deposited a dirty, red-coloured sediment, and the vapours given off from both urine and perspiration will have the same pungent and disagreeable odour. From the first the horse shows great aversion to assume the recumbent position, but remains standing still until he falls from sheer muscular debility ; and when once down, can never get on to his feet again until assisted. There is this difference to be observed in the course of the disease in different animals, that horses will remain standing as long as possible, when cows or cattle generally take the ground from the first, and cannot by any means be made to assume the standing position. The appearance of the effusions vary according to their situation, but they never take on the suppurative process. The joints of cattle have been observed to suppurate and slough, but this is due to the parts becoming bruised by their continual lying upon them.

Such are some of the appearances presented by animals suffering from Acute Rheumatism in the external parts. But, as previously mentioned, the heart is very liable to become affected, and when it is so, presents a group of symptoms peculiarly its own, although they may escape observation until considerable effusion and alteration of structure has taken place in the textures of the heart, and it is only by close watching and auscultation that you become aware of their existence. That the heart has become affected is shown by the animal evincing pain when percussion is applied to and the intercostal space is pressed upon on the near side. There is also great difficulty of breathing, and palpitation when the animal makes the slightest movement. On auscultating the chest at the commencement of the disease, the regularity of the heart's action may be little altered ; but the sounds proceeding from it will become abnormal, and will vary according as the pericardium, or the lining membrane of the heart, is the seat of the disease. When the endocardium is affected, the hard friction sound continues to the last ; but when the pericardium is the seat of the disease, and especially when the disease has made considerable advancement, the sound becomes soft, muffled, or bellows-like. This is due to the effusion and the bands of lymph which are found in the pericardium. It is of importance to distinguish between Endocarditis and Pericarditis, because I am of opinion that

when an animal becomes affected with Endocarditis there is such alteration of the lining membrane and valvular structures, causing obstructions to the circulation, that it is impossible the animal can ever recover to be of any use ; whilst, when the disease is confined to the pericardium, there may be considerable effusion and formation of bands of lymph that may terminate in adhesion, and leave the action of the heart very slightly impeded. I have had opportunity of making *post-mortem* examination on three animals that had died from Acute Rheumatism—viz., one four-year-old gelding, and two foals. In the four-year-old, which died on the eighth day from the commencement of the attack, besides the external effusions, I found the heart enormously enlarged, and the pericardium distended with lymph mixed with a large quantity of gritty material. On cutting into the substance of the heart, I found the lining membrane of the ventricle and auricular ventricular opening completely studded over with this same gritty material. With the exception of slight symptoms of inflammation of the pleural surface of the near side, all the other organs appeared healthy. I may here mention that this animal had suffered great pain for six days. I saw him every day for seven days, at which time he seemed to be greatly relieved, and I informed the owner that I thought him so much better that I would not require to see him so often. Judge of my surprise, when the following morning I received a message to say the horse had died very suddenly, after being seized with a fit of coughing. The appearances presented on opening the chest of the two foals were very similar ; but the effusion and deposit of granular matter were entirely confined to the pericardium.

*Causes.*—May be defined to be predisposing and exciting. The predisposing cause is hereditary tendency. The only exciting cause that I am aware of is cold, which acts with powerful effect when an animal is exposed to currents of cold air when in a heated or perspiring state.

*Treatment.*—Notwithstanding the claims set up for the preparations of salicine as a specific for Rheumatism, especially in its acute form, I think I may safely assert that as yet there is no single remedy known which has the power of cutting short the course of its duration. It really does seem strange that if the half that is said of its efficacy be true, that there should continue to be a single sufferer from it. Dr. William Squire, in a paper read before the Harveian Society, Nov. 20th, 1879, and reported in the *Lancet* of Dec. 20th, gives details of eight cures of Acute Rheumatism treated by salicylates, and gives the astonishing result of relief in less than two days, and all convalescent in ten. My own case showed a result very different. I was treated by the same system under very favourable circumstances. My medical attendant, or his assistant, saw me at least twice a day. So soon as the doctor pronounced my disease to be Acute Rheumatism, he prescribed salicylate of soda and aconite, to be taken every fifteen minutes. I continued to take this until my lips wrinkled and became so swollen that I could scarcely open my mouth, when the aconite was stopped, and salicylate of soda continued to be taken every two, and then every four hours. This was continued till the singing in my ears became intolerable, and my head got into such a state that I was not sure if I had a head on my shoulders. During all this time there was no abatement of a single symptom, no relief from pain, no slowing of the pulse or lowering of the temperature. The pulse ranged from 92 to 98, and the temperature from 102 to 104 degs., until the seventh day, when, there being no mitigation of the affection, the doctor consented to the discontinuance of the acid. But the singing in my ears and peculiar sensations in my head continued for other ten days after everything that medical attention and skill could devise. I am here to-day, after fourteen weeks, only very partially recovered. Gentlemen, I feel that I have trespassed on your time in making these details regarding myself ; but I

think they go to prove that the treatment of Rheumatism by the salicylates is not the infallible remedy that its advocates would lead us to believe. I have tried it somewhat extensively in the treatment of cases of Rheumatism, both in the acute and chronic form, without noticing any well-marked benefit. It most undoubtedly possesses the power of lowering the temperature, and thereby reducing fever ; but I do not think that its repute as an alleviator of pain has been clearly established. The subject is worthy of further trial and study. Better results may be obtained when more is known of the drug, as to its properties, proper dose, and best mode of administration.

The objects we have to keep in view in the treatment of Rheumatism are, to relieve pain, the prevention of the spread of the local affections, thereby lessening the chances of their extending to the heart ; to subdue inflammation and lessen the amount of inflammatory products within the system, and by direct applications to affected joints, prevent it from continuing in a chronic form. The system of treatment that is most likely to accomplish this is, when the case is seen early and the fever is high, bleed moderately ; and, as the bowels are as a rule inactive, give a dose of physic along with ʒi. of Pulv. opii., following up with ʒi. Nit. potass and 10 drops Fleming's tincture of aconite, three times daily, in a little cold water ; this the animal will take freely, as the thirst is generally great. As a reliever of pain, I set great value upon the hypodermic injections of morphia, repeated at intervals of six or eight hours ; administered in this form they are not so likely to set up their constitutional effects. The nitrate of potass should be persistently given, even when the kidneys seem to be acting inordinately, as it is now well known to possess the property of preventing the separation of fibrine from the blood ; therefore it is inferred that it lessens the tendency to fibrinous exudation. With regard to the external treatment of affected parts, the application of hot fomentations, and, when applicable, enrolling in flannel bandages, generally affords relief ; but when it fails to do so, I have seen great benefit derived from the application, over and around the inflamed part of a blister, and when the blister has acted, a rubbing in of a liniment, composed of aconite, belladonna, Tinct. opii., and a little soda carbonate, three times daily. When any of the symptoms of cardiac disease arise, they are best combated by hot fomentations to the side, the application of blisters, and the rubbing in of the above liniment, with the internal administration of potass iodide and potass nitrate alternately.

Chronic Rheumatism is very often the sequel of the acute form ; but it often comes on independently of any previous attack, and I believe is much more frequently an attack of Influenza. It is distinguished from the acute form by the absence of constitutional disturbance, and less heat and swelling in the affected parts. There are some cases which show much stiffness and lameness in certain joints where no heat is to be felt nor swelling seen, and which prove very tedious and annoying to the practitioner, and often baffle the best-directed treatment. In fact, they are the *opprobrium medicorum* of our art. Examples of Chronic Rheumatism are met with in important joints, such as the navicular, fetlocks, knees, stifles, and hocks. It is also observed in the tendinous parts of the muscles on different parts of the body, and there is a form of it worthy of notice, which, when it seizes upon the intercostal muscles, simulates an attack of Pleurisy, but which may be distinguished from it by the absence of fever and cough and other symptoms peculiar to Pleurisy. Chronic Rheumatism, like the acute form, almost always arises from exposure to cold. When there is much effusion and enlargement of joints, the repeated application of blisters composed of equal parts of cantharides and biniodide of mercury is the most efficacious treatment ; and where there is much pain the rubbing into the blistered surface

the previously-mentioned liniment. As this form of Rheumatism also depends upon a vitiated condition of the blood, nitrate of potass, sulphur, arsenic or iodide of potassium should be administered internally. The medicine that I have myself received most benefit from is a decoction of sarsaparilla and iodide of potassium. As I said before, there is no remedy yet known that can claim to be a specific for Rheumatism in any of its forms. There is a rich field open for those who have the time and inclination to investigate the subject. There is the disease: discover an antidote, and you will deserve and receive the blessings of those of your fellows who have been its victims. You will have the satisfaction of having freed from suffering those animals who are the "humbler partners of the mortal pilgrimage" (applause).

The discussion of this paper was adjourned.

At the annual dinner, held after the business meeting, the Chairman (Mr. Connochie), in proposing the toast of "The Association," referred to the arrangement come to between the Royal College and the Highland Society, from which good results were expected. He thought it was now likely that there would be an application to Parliament for a penal clause to protect the interests of their profession from the operations of quacks who assume the title of V.S. (hear, hear).

On the motion of Principal WALLEY, the members drank in silence the toast of "The late Mr. Steel," who was one of the Highland Society's examiners, and the father of the profession in Scotland. After a number of other toasts, the proceedings terminated.

JOHN MCFADYEAN, *Secretary.*

## MONTREAL VETERINARY MEDICAL ASSOCIATION.

THE usual fortnightly meeting of the above Association was held on March 4th, Mr. C. J. Alloway, V.S., in the chair.

The members expressed their pleasure in seeing Mr. Alloway once more among them, after recovering from his late severe illness.

The following resolution was also passed: "Moved by Mr. Wm. McEachran, and seconded by Mr. J. B. Green, that this Association deeply regret the untimely death of the late John S. Thomas, an active and earnest member of the Association, and much respected by his fellow-students. The circumstances of his death are peculiarly sad, and we sincerely sympathise with his sorrowing family in their sad bereavement."

Mr. WILLIAM JAKEMAN, Boston, Mass., read an interesting report of a case of Cerebral Meningitis in a horse treated by him under the direction of Professor McEachran. The symptoms described were those of dulness, stupidity, nervous twitchings, gradually increasing to complete stupor, alternated by violent fits of excitement, pressing the head into a corner, delirious movements, during which galloping was simulated.

The treatment consisted in laxatives—large doses of bromide of potassium, and in the latter stages nux vomica. At the outset, cold applications to the head, subsequently changed to counter-irritation.

The recovery is not complete—though nearly well, slight nervous twitchings continue.

Mr. PETER CUMMINGS, Quebec, read ani nteresting paper on "Auscultation and Percussion as Diagnostic Aids in Veterinary Practice." Mr. Cummings described the various sounds discovered on auscultating (applying the ear) and percussing, or tapping, the chest. He said it was impossible for any one to hope to be able to examine diseased lungs or heart, unless they were perfectly familiar with the sounds emitted by healthy organs. None of the lungs or heart-sounds could be recognised from description, any more than

any particular musical instrument or any individual tone of that instrument ; they must be listened to both often and carefully. He would, therefore, urge upon all students never to miss an opportunity of examining the respiratory and circulatory organs whilst at college, when they could do so under the supervision of their clinical teachers. However well versed they might be in physiology and pathology, unless they could readily recognise a healthy from a diseased note, they would have wasted many valuable years. It was absolutely essential to every practitioner's success that auscultation and percussion should be to him really and truly *diagnostic aids.*

In the discussion that followed, Dr. James Bell, surgeon of the Montreal General Hospital, fully corroborated Mr. Cummings' views as to the necessity of becoming familiar with all chest-sounds. He, in a few well-chosen remarks, gave the students some valuable ideas on the subject.

After a vote of thanks to essayists, the meeting adjourned till March 18th, when papers by Mr. E. J. Carter and Mr. Donald Campbell will be read.

## ROYAL AGRICULTURAL SOCIETY.

AT the monthly Council meeting, held on April 7th, Sir Brandreth Gibbs reported that the Committee had received a letter from the Secretary of the Royal Veterinary College, approving of the new schedule of veterinary privileges as approved by the Council ; and the Committee recommended that the same be now printed, and issued to the members of the Society in the usual manner. The Committee had also received the following letter from the Highland and Agricultural Society of Scotland :—

" The Directors have to-day had the report of the Veterinary Committee before them, on the subject of joining with your Society in giving prizes to veterinary students, and after careful consideration they have arrived at the resolution not to alter the present arrangement of giving prizes in the three veterinary schools in Scotland, and also at our examinations. The sum required for these prizes is as much as the Society can devote to veterinary encouragement, and, therefore, the Board determined to-day not to join with your Society in the scheme proposed in your letter of the 30th January—at any rate, not till after our examinations cease, viz., in 1881."

Dr. Greenfield, of the Brown Institution, Wandsworth Road, S.W., had expressed his desire to have sent to him any animals or fowls suffering from the epidemic diseases now so fatal in many districts, and Professor Simonds had also expressed a similar desire on behalf of the Royal Veterinary College.

This report was adopted.

## GLASGOW VETERINARY COLLEGE.

AT the close of the session of this school, medals granted by the Highland and Agricultural Society of Scotland, Professor Allen Thomson, London ; Professor Cleland, Glasgow University ; Robert Walker, Esq., of Lethamhill ; and Principal M'Call ; and certificates of merit by the College, were awarded in the different branches of study as follows :—Horse Pathology (written examination)—Gold medal (Principal M'Call), Mr. J. Wyper ; silver medal (H. and A. S. of S.), Mr. R. Hughes. First-class certificates, Messrs. Mountney, Stevenson, and Bowie ; second-class certificates, Messrs. Blue and Douglas. Cattle Pathology (written examination)—Gold medal (Principal M'Call), Mr. R. Hughes ; silver medal (H. and A. S. of S.), Mr J. Wyper. First-class certificates, Messrs. Douglas, Stevenson, and Blue ;

second-class certificates, Messrs. M'Carthy and Bowie. Practical examination of horses as to soundness, age, etc.—Gold medal (Principal M'Call), Mr. R. Hughes. First-class certificates, Messrs. Johnson, Blue, and Pollock. Practical examination of cattle as to age, operations, etc.—Gold medal (Robert Walker, Esq.), Mr. R. Hughes. First-class certificates, Messrs. Pollock, Douglas, and Blue. Histology and Physiology—Gold medal (Prof. Cleland), Mr. Henry Rogers, jun.; silver medal (H. and A. S. of S.), Mr. James A. Gosling. First-class certificates, Messrs. Freeman, Taylor, and Creighton; second-class certificates, Messrs. Roberts, Glass, Nesbit, and Macadam. Anatomy (special and comparative)—Gold medal (Prof. Allen Thomson), Mr. John Freeman, jun.; silver medal (H. and A.S. of S.)—Mr. James A. Gosling. First-class certificates, Messrs. Roberts and Rogers; second-class certificates, Messrs. Taylor, Bradley, and Hunter. Anatomy (junior)—First-class certificates, Messrs. John Renfrew and P. D. Kelly; second-class certificate, Mr. Wm. Shand.

## MEMBERS OF THE ROYAL COLLEGE OF VETERINARY SURGEONS.

THE following gentlemen, holding the Highland and Agricultural Society's Certificate, have become members of the Royal College of Veterinary Surgeons:—

| | Date of Certificate. |
|---|---|
| Black, Jas. Barrowman, Howgate by Roslin ... ... ... ... | 1870. |
| Campbell, Angus, Galashiels ... ... ... ... ... ... | 1867. |
| Campbell, Thomas, Kington, Herefordshire ... ... ... ... | 1859. |
| Copeland, Henry, Poulton-le-Fylde, Lancashire ... ... ... | 1853. |
| Cunningham, Cornelius, Slateford ... ... ... ... ... | 1859. |
| Frost, Thomas Allen, Derra, Co. Clare ... ... ... ... ... | 1879. |
| Heard, William, Tavistock, Devon ... ... ... ... ... | 1850. |
| Ireland, Edwin, Bridlington ... ... ... ... ... ... | 1872. |
| Keane, Patrick, Killarney, Co. Kerry ... ... ... ... ... | 1877. |
| Lees, Robert, Cargillan, Tarbolton, Ayr... ... ... ... ... | 1862. |
| Little, John, Abbey Town, Cumberland ... ... ... ... ... | 1863. |
| McInnes, Benjamin J., South Carolina, U.S. ... ... ... ... | 1874. |
| Marking, Chas. Rider, Toppesfield, Essex ... ... ... ... | 1873. |
| Prentice, Robt. Bouchier, Longford, Ireland ... ... ... ... | 1879. |
| Reid, Andrew, Auchtermuchty, Fifeshire ... ... ... ... | 1859. |
| Smith, Andrew (Principal), Ontario Vety. College, Toronto, Canada | 1861. |
| Storie, John, East Linton, Prestonkirk ... ... ... ... ... | 1875. |
| Thomson, Samuel, Canniesburn, Maryhill, Glasgow ... ... ... | 1850. |
| Tivite, Thomas Gavin, Oldcastle, Co. Meath ... ... ... ... | 1869. |
| Kirk, John Hamilton, Rose Street, Edinburgh ... ... ... ... | 1878. |
| Sandford, William, Moneymore, Co. Derry ... ... ... ... | 1877. |
| Kelly, Andrew J., Dublin ... ... ... ... ... ... ... | 1876. |
| Donald, Joseph, Newton Arlock, Wigton ... ... ... ... | 1880. |
| Mavor, Frank Frederick, London ... ... ... ... ... | 1880. |
| Woods, Joseph, Kirkham, Lancashire ... ... ... ... ... | 1880. |

## NEW MEMBERS OF THE PROFESSION.

*Royal College of Veterinary Surgeons.*

AT the several meetings of the Court of Examiners of the Royal College of Veterinary Surgeons, held during the week commencing March 30th, the

following students from the Royal Veterinary College were admitted members of the profession :—

| | |
|---|---|
| Mr. Thos. John Keech ... | ... Blandford, Dorset. |
| „ Wm. Henry Beach ... | ... Woodfield Oaken, Wolverhampton. |
| „ John Trevor Jones ... | ... Rhyl, North Wales. |
| „ John James Crowhurst | ... Amersham. |
| „ Edward Geo. Johnson | ... South Auston, Rotherham. |
| „ Walter Wm. Gulleford | ... Islington, London. |
| „ Geo. Gartside Mayor ... | ... Kirkham, Lancashire. |
| „ Chas. St. Lo. Wilkinson | ... Ballycumber, King's Co., Ireland. |
| „ Walter James Palmer | ... Tavistock, Devon. |
| „ Edward Slipper | ... Catfield, Norfolk. |
| „ Harry Chrichley Talbott | ... London. |
| „ Herbert Alfred Towlson | ... Alfreton, Derbyshire. |
| „ Stephen Marsh Smith | ... Margate. |
| „ Thomas Wm. Cave | ... Nottingham. |
| „ Frederick Leeds Gooch | ... Weston Longville, Norwich. |
| „ Arthur Wm. Briggs ... | ... The Wylde, Bury, Lancashire. |
| „ Geo. Richard Griffith ... | ... London. |
| „ Donald Gregory ... | ... Tonbridge, Kent. |
| „ Thos. Jarvis Rippon ... | ... Donington Lincolnshire. |
| „ Geo. Henry West ... | ... Newent, Gloucestershire. |
| „ Thomas Skilton ... | ... Ashtead, Epsom. |
| „ Arthur Samuel Anger ... | ... Walpole, Suffolk. |
| „ Ernest Robert Harding | ... Fisherton, Salisbury. |
| „ Wm. Frederick Garside | ... East Leamington. |
| „ George Deveson ... | ... Brondesbury, Middlesex. |
| „ Theodore Chas. Toop | ... Sherborne, Dorset. |
| „ Sidney Villar ... ... | ... Staplegrove, Taunton. |
| „ Frederick Francis Woolcott | ... Bishop's Lydeard, Taunton. |
| „ Alfred Harris ... ... | ... Maidstone, Kent. |
| „ Henry T. W. Salmon Mann | ... Leeds. |
| „ William Caudwell ... | ... Worksop, Notts. |
| „ Charles Taylor ... ... | ... Nottingham. |
| „ Thomas Wm. Lepper ... | ... Aylesbury. |

Messrs. John Jas. Crowhurst, Edward Geo. Johnson, Geo. Gartside Mayor, Walter Jas. Palmer, Edward Slipper, Thomas Wm. Cave, Arthur Wm. Briggs, Donald Gregory, Henry Thos. Wm. Salmon Mann, George Deveson, Theodore Chas. Toop, Sidney Villar, William Caudwell, Charles Taylor, and Thomas Wm. Lepper passed with *great credit.*

The following students of the same College passed their second examination on April 2nd, 3rd, 5th, and 6th :—

| | |
|---|---|
| *Mr. Walter Francis Day. | †Mr. John Sibary Wheatcroft. |
| „ David Evans. | „ *Tom Cooper Fletcher. |
| „ James Hall Brown | „ John Albert Bown. |
| „ *Charles Jas. Vyner. | „ *John Penberthy. |
| „ Thos. Arthur Huband. | „ Chas. Edward Cockram. |
| „ Thos. Bower Cockshoot. | „ *Thos. Pottinger. |
| „ Sydney Bright Price. | „ Thos. Josh. McGuinness. |
| „ *Robt. James Smith. | „ *Wm. Freeman Barrett. |
| „ *George Edmundson. | „ *William Davidson. |

* Thus marked passed with great credit.
† „ „ very great credit.

Mr. †Wm. James Williams.
„ *William Louden.
„ *Arthur Broad.
„ *Robt. Samuel Barcham.
„ John Varney.
„ *Richd. Ephraim Liston Penhale.
Mr. Alfred Chas. Wild.
„ Evan Wynne Williams.
„ Charles Humphrey.
„ Chas. Curson Clark.
„ John Thos. Holms.
„ Henry Chas. Harrison.
Mr. Wm. Turner Simmons.

The following students passed their First Examination on April 7th and 8th :—

Mr. Jeffrey John Dawtrey.
„ William Langdon.
„ J. Daniel Arnfield.
„ Albert Hassall.
„ †Chas. Henry Williams.
„ Henry Jas. Skinner.
„ *Henry Ballard.
Mr. Alfred Barrett.
„ Archie J. Mullen
„ Edward Lawrence.
„ *Albert Herbert Archer,
„ *Tom Hawley Greatbatch.
„ Harry Abrey Spurgin.
„ *Herbert Wm. Peckworth.

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# Parliamentary Intelligence.

*House of Lords.—March 22nd.*

## OUTBREAK OF TRICHINOSIS.

LORD THURLOW asked the Lord Steward whether he was yet able to give any information respecting the reported outbreak of Trichinosis in January last, on board the reformatory school-ship *Cornwall*, lying off Purfleet, on the Thames.

Earl BEAUCHAMP : Mr. Power was instructed by the Board last November to make inquiry as to an alleged outbreak of " Fever " on board the *Cornwall*. He found that among 262 boys there had been forty-three cases of sickness, with one death. In the course of a very laborious inquiry, he found peculiarities in the history of the outbreak that led him to doubt whether the " Fever," was any of the usual fevers of this country, and with the object of settling these doubts, and of throwing new light on the nature of the disease, the body of the boy who had died was exhumed and subjected to *post-mortem* examination. It was found that the body was infected with trichinæ, but gave no evidence of " Fever," in the common acceptation of the word Further review of the whole history led to the conclusion that the whole outbreak had been due to the same disease—Trichinosis. A most able report on the entire subject of the *Cornwall* outbreak has been made by Mr. Power, and it is now with the printers.

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# Army Veterinary Department.

*Gazette*, March 25th.

ROYAL ARTILLERY.—Veterinary Surgeon W. Oliver, on temporary half-pay, has been permitted to resign his commission.

*Gazette*, April 9th.

VETERINARY DEPARTMENT.—Veterinary Surgeon, First Class, James Lambert, from the 17th Lancers, to be Veterinary Surgeon, First Class. Veterinary Surgeon Stuart Murray Wilson, from the 12th Lancers, to be Veterinary Surgeon.

The duties of the veterinary surgeons who are with the army corps in Afghanistan, and especially those who are attached to the depôts on the lines of communication, continue to be very onerous and heavy. Glanders is somewhat common, Scabies is far from rare, and the Foot-and-mouth Disease is particularly prevalent, and attacks elephants rather severely. The miserable transport animals sent up by the commissariat have also hampered the veterinary staff very much, filling the depôts with useless brutes which can do nothing more than consume forage.

The Lahore paper says :—"Veterinary surgeons in charge of transport animals will in future get a staff allowance of rs. 75 per month for the work. Hitherto nothing in the shape of remuneration has been given. The veterinary service is the best abused and worst paid of any in this country."

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## Obituary.

THE following deaths have occurred among the members of the profession. Mr. J. Cuthbert, F.R.C.V.S., of Leeds, who graduated in 1848. This is, if we mistake not, the first breach death has made among the Fellows of the Royal College of Veterinary Surgeons.

Mr. W. F. Chattell, who graduated in 1864, and was practising at Bromley, Kent, died at the early age of 36 years, from blood-poisoning contracted in performing an operation.

Mr. Philias Martial, who only graduated in April, 1879, died recently at Port Louis, Mauritius.

Death has also removed from us one of the oldest and most worthy and esteemed members of the profession, in the person of Mr. J. Steele, of Biggar, Lanarkshire, a man well-known in the West of Scotland. A correspondent sends us the following interesting notes regarding our deceased friend : In the demise of the late John Steele, of Biggar, the profession has, with one exception, lost its oldest member. Few indeed there are in any profession of whom it can be said that for a period of half a century their energies were devoted to its practice and its advancement. Graduating at the Edinburgh Veterinary College, John Steele obtained the Veterinary Certificate of the Highland and Agricultural Society of Scotland in 1831, along with several other students—the occasion referred to being the fourth examination held under the auspices of the society. He also received the diploma of the Royal College of Veterinary Surgeons when that Corporation was established. At intervals for the last forty-eight years did Mr. Steele attend the veterinary examinations of the Highland Society, and for many years he was one of the most valued and valuable members of its examining board. Well versed in the nature of the diseases of all the domestic animals, his special forte was cattle pathology, and it was always a pleasure and a profit to the bystanders to hear the shrewd practical questions put to the students by Mr. Steele and the late Mr. Aitken, of Kilmarnock—one of his oldest friends—alternately, nothing pleasing them better than a plain practical answer to a plain practical question ; and of them it may be truly said that they dealt not in "catch questions." Beloved by his immediate relatives and friends, revered and honoured by his neighbours and clients, John Steele passed away on January 25th, after much acute suffering, at the ripe age of 74 years, in the full possession of his intellectual faculties, regretting only the day before he died that he would never again be able to attend the veterinary examinations of the Highland Society. He was one of the closest friends and most ardent admirers of the late Professor Dick.

Dr. Sharpey, for many years a member of the examining board of the Royal College of Veterinary Surgeons, and highly esteemed by all those of our profession who came in contact with him, died on April 11th, at a ripe old age. No more competent examiner ever sat in Red Lion Square, and his compulsory retirement through failing vision was a serious event. Personally, we deeply regret the loss of a cherished friend. The *Times* of April 13th has the following notice of our late colleague at one of the tables of the examining Board :—

"Dr. William Sharpey, F.R.S., the distinguished physiologist, died on Sunday evening, at his residence in Torrington Square. Seeing that he graduated M.D., Edinburgh, so long ago as 1823, he must have been about seventy-eight years of age. The deceased gentleman was also LL.D., Edinburgh, and a Fellow of the Royal Societies of London and Edinburgh ; a member of the Senate of the University of London ; Emeritus Professor of Anatomy and Physiology in University College, London ; he was also a trustee of the Hunterian Museum of the Royal College of Surgeons of England, and a member of several learned and scientific societies at home and abroad. He was a valuable contributor to the advancement of science in the Continental and British Journals and Transactions. Perhaps one of his most important papers was his "Observations and Experiments to Purkyne and Valentin's Paper on the discovery of a continued vibratory motion produced by cilia, as a general phenomenon in reptiles, birds, and mammiferous animals." The catalogue of scientific papers published by the Royal Society of London gives a long list of his contributions to science.

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## Notes and News.

The Kirghis Sheep.—In the St. Petersburg *Archiv für Veterinar Medicin* appears an interesting article on the Kirghis Sheep, which may interest our readers. These sheep belong to the fat-tailed races, originally derived from Arabia, whence they have gradually been carried into Persia, Turkestan, China, the Kirghis, and other steppes of Central Asia. During late years the Cossacks have introduced them into their country, where it is probable they will supplant the ordinary Russian sheep. The Kirghis sheep comprise two kinds or sub-varieties : that of Kasar-Koi, or Kirghis sheep, properly so-called, and that of Usbek-Koi, or Princes' sheep—this being distinguished by its finer wool and excellent flesh ; it is accordingly better fed and cared for. With the Kirghis sheep, the skin of the nose forms a transverse fold, like that of the Merino sheep ; the ears are long and pendent, the wool somewhat long, and of a yellowish or dirty-white hue, though there are also some black or mixed colour. The rams have horns ; the ewes are uniparous. A well-grown sheep is about seventy-five centimetres in height, one metre and five centimetres long, and weighs from sixty-five to ninety kilogrammes. The hind quarter weighs from sixteen to twenty-two kilogrammes ; and ten sheep furnish from 250 to 300 kilos. of suet. The *régime* of these sheep is absolutely and exclusively pastoral. During the whole of the winter they wander about seeking their food beneath the snow. Consequently, they fall into a very emaciated condition, but no sooner does spring set in than they rapidly become fat. But during the long and terribly severe winters, when the tempests are violent, and particularly when the deep snow persists for a long time, thousands of them perish from exposure and hunger. The diseases which make most victims among them are Sheep-pox, which causes a loss of two to three per cent., Contagious Foot-rot, Angina in winter,

and Cerebral Apoplexy in hot weather. Very often during the hot season they suddenly die by hundreds in one day.

RARITY OF DEAD ELEPHANTS.—In a recent number we alluded to Mr. Sanderson's remarks as to the extreme rarity of dead wild elephants in India. Sir Emerson Tennent, in his "Wild Elephant," states that the same circumstance has been noted in Ceylon. "The natives generally assert that the body of a dead elephant is seldom or never to be discovered in the woods. And certain it is that frequenters of the forest with whom I have conversed, whether European or Singhalese, are consistent in their assurances that they have never found the remains of an elephant that had died a natural death. One chief, the Wanyyah of the Trincomalie district, told a friend of mine, that once, after a severe murrain which had swept the province, he found the carcases of elephants that had died of the disease. On the other hand, a European gentleman, who, for thirty-six years without intermission, had been living in the jungle, ascending to the summits of mountains in the prosecution of the trigonometrical survey, and penetrating valleys, in tracing roads, and opening means of communication—one, too, who has made the habits of the wild elephant a subject of constant observation and study—has often expressed to me his astonishment that after seeing many thousands of living elephants in all possible situations, he had never yet found a single skeleton of a dead one, except of those which had fallen by the rifle."

MEAT-MEAL AS FOOD FOR HORSES.—The Director of the Poppelsdorf Agricultural Academy, Professor Dünkelberg, has published some observations on the results of feeding horses on South American meat-meal obtained from Fray-Ventos, as recently practised on the chargers of a squadron of cuirassiers quartered at Deutz. The meal was baked, with leaven, in the form of a coarse bread, together with some bruised oats and a small proportion of the salts naturally present in meat, which were added to compensate for their loss in the process of making the meat extract of which this meal is the residue. A portion of this was given to each horse daily in the place of a corresponding amount of its ordinary ration of oats. According to the professor's report, the horses thus fed gained in strength and hardiness every day, and when the heavily-accoutred cuirassiers went through their last autumn manœuvres, side by side with a squadron of well-mounted light hussars, the horses of the former showed a marked superiority throughout. In view of the large amount of nourishment contained in small volumes of this food, and the possibility of carrying many days' rations of it without materially adding to the horse's load, the professor believes that its general adoption for the cavalry is well worthy of consideration, and a further supply of meat-meal biscuits has been ordered by the Minister for War, so that the experiments may be conducted on an extended scale. Dr. Dünkelberg also suggests its employment in feeding race-horses, since it has no tendency to produce fat, but is rather converted into firm contractile muscular tissue, and at the same time operates most beneficially on the constitution of the blood.

LATITUDE AND ANIMAL LIFE.—In Scandinavia horses are not met with above 67° north latitude. Meutzer gives the most northerly limit of the glutton and the lemming as 70° ; of the hare and stoat as 69° ; tame reindeer 69°. The southern limit of the tame reindeer in Sweden is 64°, which now appears to be the most northerly limit of the elk ; but wild reindeer are met with on the Norwegian fells nearly as low as 60°.—*Ten Years in Sweden.*

AGE OF THE ELEPHANT.—Mahouts can usually tell the age of elephants tolerably correctly. A young animal, though of full size, or a very old one, cannot be mistaken, but it requires much experience to estimate those of

middle age. I have known even experienced men differ about the same animal to the extent of fifteen years. The general appearance of the animal suffices in some cases. A very old elephant is usually in poor condition, and the skin looks shiny and shrivelled. The head is lean and rugged, the skull appearing to have little but skin upon it ; the temples and eyes are sunken ; and the fore legs, instead of bulging out above the knee with muscle, are almost of the same girth throughout. Instead of walking firmly and planting the feet flat, an aged elephant brings the feet to the ground somewhat in the manner of a plantigrade animal, touching with the heels first. But all the above symptoms may be present in a greater or less degree in debilitated, middle-aged animals, and are consequently not conclusive ; but the appearance of the elephant's ear will probably settle the question. The ear is relied upon in ageing elephants, as the teeth are in a horse. In very young elephants —up to six or seven years—the top of the ear is not turned over (as in man) ; but with advancing years it laps over, in old elephants very much so, and the ear is ragged and torn along the lower edge. The elephant is full grown, but not fully mature, at about twenty-five years of age. At this period it may be compared to a human being at eighteen ; and it is not in full vigour and strength till about thirty-five.—*Thirteen Years among the Wild Beasts of India.*

Statistics of Stumbling Horses in Berlin.—The police authorities of Berlin have been carrying on a series of exact observations, in order to test the relative merits of the different kinds of pavement laid down in the city as a foothold for horses. For this purpose the traffic on a much-frequented stretch of asphalte, 504 mètres long, and on a busy thoroughfare, 1,207 mètres in length, paved partly with the best, partly with Belgian, and partly with inferior granite, was carefully watched from 6 a.m. to 10 p.m. each day for a period of four weeks. The results recorded speak very badly for the granite, as here one horse stumbled for every sixty-three miles of distance covered, while on the asphalte the proportion was one in 540 only. It should be noted, however, that neither horses nor drivers were very well accustomed to an asphalte pavement at the time the observations were made.

Dog-Cakes.—We understand that "Spratts Patent," the manufacturers of the celebrated Patent Meat "Fibrine" Dog-cakes, have been awarded a Gold Medal for their exhibits at the Sydney International Exhibition.

Louping-ill in Sheep.—At a meeting of the Edinburgh Botanical Society, held on the 11th March, Mr. A. Brotherston, of Kelso, made a communication on "The Pasturage of Western Teviotdale in connection with the 'Louping-ill' of Sheep." At the request of the local Farmers' Club, the author made a botanical examination of the pasturage of a number of sheep-farms in this high-lying district. On a spring visit he could not trace any poisonous plants to which to attribute the disease. On the other hand, when making another botanical inspection in autumn he found ergot very abundant. He detailed in the communication no fewer than twenty-three species of grasses which were ergotised. The *Juncaceæ* and *Cyperaceæ*, which form a great proportion of this hill-pasturage, were free from ergot, *Claviceps purpurea;* but some of the *Cyperaceæ* were very subject to smut. Mr. Brotherston suggested the eating of ergotised grasses as a probable cause of the disease, which in this district is a spring one. He emphasised the following in this connection :—No different species of plants characterise the isolated localities infected with the disease, but much ergotised grass was found there ; the toxological effects of ergot were similar to those physiological ones characteristic of the disease. In Teviotdale spring is the only time when sheep may perchance eat ergot in quantity. To eat the pastures bare appeared to be the most feasible remedy for this disease.

## RESPONSIBILITIES OF VETERINARY SURGEONS.

*To the Editor of the* VETERINARY JOURNAL.

SIR,—Having had upwards of six years' experience in an extensive practice in England, and this supplemented by several in Her Majesty's service, I claim to be heard on the above subject.

The theme introduced by Mr. Fleming at the Lancashire Veterinary Medical Association is a wide one, and should receive serious consideration at the hands of the profession at large. Being out of the running, to a certain extent, we in the service can afford to view the matter with an air of impartiality, *ergo* our suggestions should be taken *cum grano salis*.

Although Mr. Fleming has handled the subject in his usual masterly style, I think the responsibilities he has assigned to his *confrères* are of too sweeping a character; so much so, that the young practitioner's life would become a burden to him, if they were known to that class of the public who are ever on the alert to make capital out of our shortcomings.

I would be the last man to uphold ignorance or incapacity, but it must be admitted on all sides that there are times in every man's career when he does not possess that power of discernment naturally obtained by long study and practical observation. Practitioners can be found in abundance, possessing a fair amount of acumen, and who are able generally to pull through and give satisfaction, but could never, under any circumstances, rise to a position instanced in Spooner, Fleming, Williams, etc.

I will not take upon myself to define where "responsibility" begins or ends; the subject is a vexed one I know from experience, but I do contend that *treatment* ought never to form part of it, unless it could be proved that gross ignorance or carelessness was displayed. Although we have remedies laid down in text-books as *par excellence*, they are not always adopted as the only orthodox plan of treatment. Where do we find two medicos administering the same agents for allied diseases? We have homœopathists, hydropathists, and allopathists, each and all convinced theirs is the proper mode of procedure.

No, where doubt does exist is in *diagnosis*, and here the specially-gifted comes in. Take, for instance, a case of Pleuro-pneumonia in its initiative stage; listen to the hard swearing that sometimes takes place between professional brethren in courts of law. Is the man whose opinion was proved to be erroneous to be held responsible for what might occur through an outbreak of the above disease? Again, I once had occasion to give an opinion as to whether or not a horse was Glandered. The veterinary surgeon in charge persisted in its being Catarrh; although the symptoms were obscure, I unhesitatingly pronounced it Glanders. Another gentleman was called in, who would or could not give an opinion. To prove the matter, a donkey was inoculated, and died on the sixteenth day after operation, from Glanders and Farcy. Here was a case which was difficult to diagnose, as proved by the third opinion. Did the first professional attendant render himself liable to damages? If so, our position would be untenable, as cases of this kind are of every-day occurrence.

The rock on which we most frequently come to grief, is that of *examination as to soundness*. Difficulties seem to arise, and what at first appear molehills become at length insurmountable barriers. Why, I am at a loss to understand. Dentition, although sometimes erratic, is a sure criterion of age. There is no doubt about Roaring. Spavin may be open to discussion, as to what is rough hock or true Spavin. Other cases might be cited anent this subject, but the above examples will suffice. The duration of disease is also a vexed question. A horse is purchased, and dies within a few days

from what is, in common parlance, called internal abscess. Law is resorted to; veterinary surgeons are subpœnaed, and with what results we are already cognisant.

Now, sir, why is all this? Is it due, as stated by Mr. Fleming, to a want of professional education, whereby a just discrimination between health and disease, or progress of disease, is not understood; to etiquette, that quality innate in all true-born gentlemen, or to notoriety and filthy lucre, as advocated by some? I think we may fairly say it is the offspring of all combined. In stating this do not misinterpret my meaning. That we have a good sprinkling of gentlemen in the profession, of the highest integrity and attainments, no one can deny; and in alluding to £ s. d., I do not insinuate that *anyone* would sell his honour for the sake of *price*. If that class does exist, I have been extremely fortunate in not making their acquaintance. That young gentlemen launching a practice require all the money they can obtain is feasible enough, especially in cases where long credit has to be given; but I do not think that even the worst of our representatives could answer the delineations depicted by Mr. Fraser in the VETERINARY JOURNAL of December last.

In cases where litigation is the order of the day, the system of calling in "specialists" nominated by the court, as proposed by Mr. Lambert, would be an excellent one, tending to do away with petty jealousies so often displayed. The pernicious practice of allowing advocates to call in their "pet vets." (excuse the misnomer), is to be deplored, as tending to foster that want of unity so prominent in our profession. Several lawyers of my acquaintance, whose income from this class of practice is considerable, are in the habit of suggesting that Mr. *So-and-So* should be consulted—not that Mr. So-and-So would equivocate in any way, but still, his professional capacity has been pretty well gauged by his sharp legal friend.

If all matters of veterinary jurisprudence could be referred to arbitration, what an amount of scandal would be avoided. The appearance of professors in the witness-box would be a thing of the past. The public would cease to look upon us as the *mauvais* lot we are at present; and I fancy unanimity would be established amongst us. There is no reason why arbitration should not be a *fait accompli;* we have only as a body to set our faces against the present system, in order to make the public subservient to our wishes. Of course, criminal cases, or those brought up under Martin's Act, must be decided in open court; but these do not constitute the bulk by which our name is brought prominently before the public. Arbitration is just as lucrative to the profession, points at issue are quite as easily settled, and without that sense of humiliation so objectionable in open court, with its attendant gaping public.

Can you not, sir, still further *ihre Feder egreifen* to extricate us from this fearful state of alienation. It appears to me, the more we become enlightened on professional subjects, the greater becomes the breach in etiquette and charitable feeling. Why cannot that bond of union which so nobly animates the sister profession, become applicable in our case? Surely the time is not far distant when these bickerings will exist only as relics of the past. We have good men striving, both by example and precept, to lead the van in the even tenor of its way. Men the opposite of selfish, spending time, money, and even sacrificing their health, to place us on a par with the rest of the professions, and to establish that healthy basis so essential in any well-organised body. So long as we have men like General Sir F. Fitzwygram, Messrs. Fleming, Greaves, and a host of others I could mention, holding the views they do, we must advance, and great ought to be their reward. If there are a few ungenial spirits amongst us, moulded after the fashion of former years, let them reconsider the error of their ways, and

come one and all to the threshold of unity, remembering the old adage, "A house divided against itself cannot stand."

I am not acquainted with the ethics inculcated by the promoters of the Defence Fund—no doubt they are admirable and worthy of support. What we want is a guild, not only to deal with outside oppression, but to inaugurate a new era, for the suppression of that cankerous spirit so rampant in our midst. Believe me, yours faithfully,

India, *February*, 1880. PFERD.

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## THE ARMY VETERINARY DEPARTMENT, AND ITS GRIEVANCES.

*To the Editor of the* VETERINARY JOURNAL.

SIR,—You have well and fairly stated the grievances of the army veterinary surgeons, and every word is strictly within the bounds of truth and moderation. But it is not likely that anything will be done to remove these grievances, or to do justice to those gentlemen, until something more than words or appeals to the authorities is resorted to. The medical department of the army was as badly treated and as studiously ignored as the veterinary department now is; but it has succeeded in obtaining pretty well everything it desired, and can at any time exact its own terms. And how has this been accomplished? Why, by merely stopping the supply of candidates for the army. This simple step was followed by absolute success, and it would be the same if the veterinary profession cared to adopt it. Let the schools and practitioners recommend young veterinary surgeons not to apply for admission into the army, until the serious grievances which are now so loudly and justly complained of be removed, and the result will be apparent before many months elapse. So long as the profession chooses to be snubbed and insulted, so long will it be so. In this, as in everything else, it has the remedy in its own hands. I beg to remain, Yours obediently,

*April 10th.* "MARS."

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## OUR SOCIAL STATUS.

*To the Editor of the* VETERINARY JOURNAL.

SIR,—It will not be denied by the majority of our readers, that the social status of veterinary surgeons is much lower than it might be, or than it would please many well-wishing outsiders to see it. But it can also scarcely be denied that we have, in a great measure, ourselves to thank for this state of affairs. There is no doubt whatever that a prejudice against us exists among a large section of the public, and the reason for this prejudice is unfortunately, in a great many instances, too good to be termed baseless, and we should all, having the interests of the profession at heart, combine to obtain its removal. Individual attempts, although praiseworthy in the highest degree, are almost useless, and unless a general movement in this direction be started, this prejudice will continue to exist, and our social status will remain at its present unfortunate level.

First, let us enter into some of its causes. Some writers and well-wishers of the profession have mentioned the existence of a forge as a lowering influence, and likely to cause the generally ignorant public to associate the title of veterinary surgeon with blacksmith, etc.; others, the tendency—nay, almost absolute necessity of associating with stable attendants and hirelings as a degrading part of the veterinary surgeon's duty. But these are trifles in comparison with some of the deeper evils entirely under the control of the veterinary surgeons themselves. Let us take one of them—viz., *horse-dealing*. What a number of veterinary surgeons there are who follow horse-dealing as a trade, in addition to their legitimate practice! And yet do these

men think they can ever attain to a social position anything like that of the medical practitioner? Do many *gentlemen* associate with horse-dealers? Very few indeed, and they are not looked upon very favourably by their friends. Horse-dealing is a very respectable trade, but it is a *trade*, and consequently can never be equally associated with a profession. One must sink, and with us it is generally the latter. There is no reason whatever why a horse-dealer, if he wishes, should not put himself to the trouble and expense of going through a course of study at a veterinary school, if by so doing he knows he will obtain knowledge which will be infinitely useful to him in his trade; but it ought to be distinctly understood, as a law of veterinary-medical etiquette (and so as binding as the laws of the Medes and Persians), that any member of the profession practising horse-dealing should sink the title of veterinary surgeon while so employed. Many gentlemen habitually deal in horses, but they have an acknowledged position, and what they do for their amusement does not carry a loss of social status with it. We have not sufficient standing to risk losing any that we have, but it is greatly to be feared that although there is an amount of baying at the moon for a social status which would be very pleasant could it be dropped from the clouds for them, very few will touch their pockets to obtain it.

Another great evil is that of *livery-stable keeping*. How can a veterinary surgeon who keeps livery-stables ever hope to rise higher in the social scale than a keeper of livery stables? And lately, as if we already had not enough lowering influences, an advertisement may be seen in which a veterinary surgeon, full-blown M.R.C.V.S., publishes himself as a kind of superior *dog-fancier*, and offers to provide any one having sufficient money, with any kind of dog, from a mastiff to a toy-terrier. Really, the evils I have mentioned above are as nothing to this last.

Why cannot veterinary surgeons do without touting for practice by means of advertisements? Medical men seem to do pretty well without it. Why should the former deem it necessary to have business cards as large, almost, as sheets of notepaper, very much after the style of thing one's chimney-sweep leaves behind him?

Quackery and the forge cannot be compared with those evils that are strung together above—the former must die a natural death in course of time, and a forge is necessary in some form or other to a veterinary surgeon. No gentleman will think the less of a veterinary surgeon whom he knows to be an upright, conscientious man, because he keeps a forge. He knows perfectly well that the forge is a necessary adjunct to the pharmacy, and that it is, or ought to be, used as such. There is no doubt, though, that in many cases the forge brings in a large part of the yearly returns; but this should not be, for then it is used not in a surgical way, but as a trade, and as it has been stated before, a profession and a trade cannot be combined without lowering the position of the man who tries it.

It has been said that it is almost impossible for young a practitioner to obtain practice without "tipping" stable attendants, coachmen, etc., and it is greatly to be deplored that it is very true; but there is much difference between giving an occasional half-crown to a groom and associating with him.

Much has been done during the past few years, by means of a more difficult matriculatory examination and lengthened terms of study, to raise the tone of the profession; but if we wish to continue the improvement, we must give up some of our present habits, and not meddle with trades calculated to lower us in our own esteem as well as that of others. If we wish to be considered gentlemen in every sense of the word, we must be careful to act as gentlemen, dress as gentlemen, and live as gentlemen to the best of our ability. There is no reason why, because a man happens to be a veterinary surgeon, he should take every means in his power to advertise himself as

such by his dress, conversation, and general appearance. The days are, happily, fast disappearing, in which the veterinary pupil's great aim was to appear as "horsey" as possible, to wear the tighest continuations he could get into, and never to be without a straw in his mouth; but even now it is no uncommon thing to meet men of this stamp in the profession—good men at their work, and not likely to make a mistake in practice, but of the old school, and not caring to better their social position. Other men there are who, while wishing the profession to advance, do not see how they themselves can help it onward, and consequently grow apathetic and careless about it. Our veterinary medical societies and the Army Veterinary Department have done a great deal in a quiet unostentatious way to raise the tone of the profession and to increase the public knowledge on veterinary matters; but it is still surprising what an amount of ignorance exists with regard to the scientific attainments necessary to make a good veterinary surgeon.

Lately, we have received a sharp rebuff for expecting perhaps what those in authority thought too much—viz., rewards from service in the field. This is one of the most, if not the most grievous insults that has ever been offered to a body of professional men. It has been acknowledged that our army brethren have done their duty on active service manfully and well; and yet, although highly recommended for some recognition of their services, the only outcome has been the granting to an officer holding the rank of colonel a good service pension of one-half of what he ought to have had given him. It is to be hoped that the profession will know how to resent an insult of this kind; and young gentlemen thinking of entering the army would do well to pause, and think whether it is worth their while to enter a service in which the halfpence are few, and the kicks (similar to the above) many. A small recognition by Government would have been sufficient to help the profession onward in its social struggle, but even a C.M.G. was thought too much to give to the head of the profession in South Africa.

A new Parliament has lately been elected, and it is to be hoped that those of our brethren who have any influence will use it to obtain for the Army Veterinary Department perfect equality with the other departments of the service. This would be one grand step towards a higher social status for the whole of the profession, but as long as such an important branch of it is considered inferior to the rest of the army, so long will we all remain behind. There is an old proverb about the thin end of the wedge. Let us apply it as far as possible.

"UBIQUE."

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## UNMITIGATED QUACKERY.

*To the Editor of the* VETERINARY JOURNAL.

DEAR MR. EDITOR,—Knowing your affection for the animal creation, and your general desire to promote the universal happiness of mankind, I feel no apology is needed in handing you the enclosed card.

Should it (the card), or its author's audacity, make you burn, please note that the lotion is an antidote. England the enlightened most undoubtedly must patronise such charlatanism, else it would not exist.

Is the aristocrat or the plebeian the most stanch supporter?

Yours sincerely,

London, *April 14th.* "ANTI-PSEUDO," SENIOR.

CHARLES CROSS,

HORSE AND DOG DOCTOR,

2, GRAY ST., JAMES ST., OXFORD ST.,

Respectfully informs the Nobility, Gentry, and the Public in general that having had many years experience in the above Business, he can undertake the effectual removal of Warts or Wens from Cattle and Dogs by the use of a preparation known only to

himself. He can also supply an infallible Lotion for Wrenches and Sprains, Sore Backs and Wrung Shoulders in Horses. This Lotion is likewise an excellent remedy for Burns, Scalds, or Bad Legs on the human frame.

C.C. undertakes to Cure the Epileptic Fits on the Human Frame.

C.C. well understands every disease affecting the Dog, and hopes by unremitting attention to the cases entrusted to his care, to obtain a share of public patronage. He can also cure Dogs of any kind of fits.

C.C. undertakes to cure the Mange in Horse, Dogs, and Sheep.

C.C. has lived with LORD GIFFORD as Kennel-man and Kennel-huntsman for several years.

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## COMMENTS.

WILL a time ever arrive when veterinary surgeons shall agree as to what constitutes soundness in the horse, or when their perceptive faculties are so trained that they will be unanimous in their verdict that a horse is lame or free from lameness, that disease is present or absent? Though lawyers may suffer seriously when such a time arrives, yet the public will certainly benefit, and the profession be spared a large amount of ridicule and opprobrium. But if this desirable period does not come soon, it would seem as if the opinions of veterinary surgeons will cease to be in request. Such at least might be inferred from the following communication of a Scotch breeder to an agricultural contemporary :—

"In 1862, at the Royal Agricultural Society's show, held at London, the late Duke of Hamilton had a horse entered for competition, and, according to the rules of the Society at that time, a certificate of soundness had to be sent along with the entry, which I obtained through the inspection of Professor Dick, Edinburgh, and was also passed as sound by the acting veterinary surgeon at the exhibition.

"In 1864 this horse was again entered for competition at the Royal Agricultural Society show held at Newcastle, and certified sound by Professor Dick; but, while competing, Professor Simonds, the acting veterinary surgeon for the Society, objected to the Duke's horse as being unsound. So, having charge of the Duke's stock, I telegraphed to Professor Dick, Edinburgh, the best authority in Scotland at that time, and on his arrival he pronounced the horse sound; the consequence was that the Royal Society came to the conclusion that there would be no veterinary inspection of horses at future exhibitions, and there has not been since.

"In 1870, at the Highland and Agricultural Society's show at Dumfries, Professor Williams acted as veterinary inspector for the Society, and a good many valuable animals were rejected as unsound; amongst others, I had one put out as unsound which I could prove was sound, and one that I had sold as being unsound, was passed, and gained a first prize.

"The result was that the directors resolved to have no veterinary inspection at their exhibitions in future, and they still adhere to it.

"At the last London show in the Agricultural Hall, the Cart-horse Society appointed a veterinary surgeon as one of the three judges, an unusual circumstance, and also had Professor Pritchard acting as veterinary surgeon. The result was that some of the best animals exhibited were objected to; and to prove their skill in the profession, one animal was awarded a prize, which was decidedly lame from a sad defect. And as to my two-year-old colt and four-year-old mare that were rejected, to satisfy myself on the subject, I have submitted the animals to the inspection of a veterinary surgeon of very great experience and the highest reputation, who pronounces them both sound, and the two judges, Mr. Lamb and Mr. Wade, were of the same opinion."

---

THE co-operative system of cheap horse-and-cattle-doctoring, by agricultural and veterinary corporations, appears to be gaining ground. The example of the Camden Town Veterinary School is followed in the underselling line by the Cirencester Agricultural College, which, like that School, now designates itself "Royal," and inaugurates its adoption of the high-sounding prefix by the following advertisement :—

VETERINARY SURGERY.—VETERINARY HOSPITAL. The Royal Agricultural College, Cirencester.—HORSES are received as PATIENTS, at a charge of 14s. a week each, including medical attendance and treatment; Cattle similarly at 5s. a week; *Sheep and Dogs at 2s.* The Turkish Bath can be had for horses that are not patients, at a charge of 5s. a bath, by giving a day's notice.

When these establishments place such a low value on veterinary services, we can scarcely wonder that the public follow the lead, and estimate them at the same degree. It looks almost like a joke to read this other advertisement, and we hope the profession has treated it as a joke, and allowed the Directors of the Company to discover why no candidates have appeared for the vacant situation. Proper qualifications and experience must indeed be a drug in the market, when such terms are offered for them ; while as for time—why, that goes for nothing !

TO VETERINARY SURGEONS.—The Directors of the Liverpool United Tramways and Omnibus Company are prepared to receive APPLICATIONS with a view to the appointment of a properly-qualified and experienced professional man, capable of taking charge and supervision of the VETERINARY SERVICE and Shoeing of 1,800 Horses, and to devote the whole of his time to the duty. Salary to commence with, £250 per annum.

## TO CORRESPONDENTS.

A CORRESPONDENT who is engaged with an investigation on fungi which grow on the skin, will be much obliged to any gentleman who can send him a dog affected with *Tinea tonsurans* (ringworm), or put him in the way of getting one. He is also desirous of procuring hairs from a cow affected with the same disease, or what would be still more convenient, a portion of the affected skin preserved in alcohol, or a two-per-cent. solution of bichromate of potash. The Editor will take charge of any material or correspondence in connection with this request.

THE Editor would also esteem it a great favour if veterinary surgeons in India would carefully inquire whether the disease described in "Veterinary Sanitary Science and Police" (vol. ii., p. 305) as the Venereal Disease of Solipeds (*Myelomalacia contagiosa*), exists in that country. Its geographical distribution is rather extensive in Europe and Africa, and it will be rather strange if it does not also prevail in India.

## ANSWERS TO CORRESPONDENTS.

PFERD.—E. Hering, junr., has published an "Etymologisches Wörterbuch," price two marks. It is sold by Schickhardt and Ebner, of Stuttgart. There is also a "Dictionary of the German Terms used in Medicine," by Dr. Cutter, published in America, the price of which is three dollars. These are the only works we know : the last will probably suit your purpose best.

INQUIRER.—The remarks will appear shortly. Chauveau's "Anatomy" gives the best and most minute description. See the English translation.

W. B.—The growth appears to have originally been a parasitic cyst, the cavity of which still exists, although the capsule is very thick and has undergone calcification.

## Communications, Books, Journals, etc., Received.

COMMUNICATIONS have been received from J. McFadyean, Edinburgh ; W. H. Coates, London ; Professor Walley, Edinburgh ; A. Jones, Queen's Bays, Dublin ; Professor McCall, Glasgow ; W. J. Arkcoll, Macclesfield ; Dr. Greenfield, London ; J. T. Dibbin, 5th Lancers ; "A Young Practitioner" ; "Cygnus" ; A. Lawson, Manchester ; Dr. Thin, London ; "Ubique ;" H. Olver, Tamworth ; A. E. Macgillivray, Banff ; T. Briggs, Bury ; W. H. Locke, Manchester ; J. McQueen, Glasgow ; R. Paterson, Downham Market ; "M.R.C.V.S."

BOOKS AND PAMPHLETS : *E. Henderson, M.D.*, Elephantiasis Arabum ; *J. M. Wehenkel*, Etat Sanitaire des Animaux Domestiques, etc. ; *H. Putz*, Die Stelling der zu den übrigen zweigen der Naturwissenschaften.

JOURNALS, ETC. : *American Veterinary Review ; Chicago Live Stock Journal ; Lancet ; Medical Press and Circular ; Mark Lane Express ; Agricultural Gazette ; Farmer ; Annales de Méd. Vétérinaire ; Wochenschrift für Thierheilkunde and Viehzucht ; Recueil de Méd. Vétérinaire ; Deutsche Zeitschrift für Thiermedicin ; L'Echo Vétérinaire ; Revue Vétérinaire ; Live Stock Journal ; Edinburgh Medical Journal ; Quarterly Journal of Microscopical Science ; Journal de Medecine Vétérinaire.*

NEWSPAPERS : *Montreal Gazette ; Retford and Gainsburgh News ; Scotsman ; Montreal Illustrated Journal of Agriculture ; Melbourne Leader ; New York Herald ; Lynn Advertiser.*

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## LONDON, E.C.

THE VETERINARY JOURNAL
AND
Annals of Comparative Pathology.

JUNE, 1880.

## HORSE-POX.

BY D. MACEACHRAN, F.R.C.V.S., PRINCIPAL OF THE MONTREAL VETERINARY COLLEGE.

*Variola Equina.*—The prevalence of this disease in horses in the city of Montreal and surrounding districts, in an epizoötic form, renders it of more than special interest to veterinarians; hence we present them with some remarks on the disease.

That the disease is not new there can be no doubt; but we are not aware that it has ever been described in Canada till we published an account of its existence in 1877, during which year it prevailed nearly as extensively as now.

By some authorities only two forms of Variola are supposed to exist, viz., Small-pox in man, and in sheep; an idea which, strange to say, was brought forward at a meeting of medical men recently held in London, England, to discuss animal vaccination. The February number of the VETERINARY JOURNAL, referring to this meeting, says:—"Veterinary pathologists will be rather startled to hear that there are only two kinds of Variola, human and ovine! that Vaccinia is only human Variola modified by the cow, though all attempts at producing the former by inoculation with the virus of the latter, have failed in latter days, though it was easily accomplished formerly; and that Horse-pox was only observed by incompetent foreigners."

That true Variola is seen in most of the domestic animals is well known; that there are distinctive and peculiar types essentially varioloid, but differing in character and symptoms in the

different species, seems not to be generally understood among members of the medical profession. It is a fact, nevertheless.

True, the disease in horses and cattle is of a much milder form, and not so fatal or contagious as the human and ovine variety ; yet the true varioloid nature of these diseases is quite as distinctly marked.

The idea of the equine form of the disease being merely human Small-pox modified by the peculiar organisation of the horse, is quite untenable. The celebrated French veterinarian, Chauveau, has refuted this idea by experiments. He has inoculated cattle with human Small-pox, obtained papular pustules quite different from horse or Cow-pox, and re-inoculation of man with lymph obtained from the pustules has produced Small-pox in man.

*Lymph from Horse-pox or Vaccinia.*—The distinctive features of Vaccinia, and its true varioloid nature, are amply proved by the successful prevention of Small-pox by its influence on the system by vaccination.

Horse-pox is communicable to man and other animals ; it is easily produced in cattle by inoculation ; the number of grooms to whom the disease has been communicated, and the distinctive features, and regular course and termination, so closely resemble vaccination, as to leave no doubt as to its nature being variolous.

*The Period of Incubation.*—The time elapsing from the introduction of the virus until the manifestation of the symptoms, varies from three to eight days.

The initial symptoms are slight dulness ; disinclination to exertion, and usually a swelling of one or more of the limbs ; with a slight fever, evidenced by a quickened pulse and elevated temperature. The part of the body on which the eruption is about to take place is swollen and painful, the skin when colourless is red, the hair bristly, and it feels rough and nodulous. At this time the fever is high, and the animal moves reluctantly, the swelling being painful to the touch. The appearance of a vesicular eruption, which soon bursts and discharges a glutinous straw-coloured serosity, emitting a very strong and characteristic smell, enables you to recognise the disease as soon as you enter

the stable. With the eruption, in most cases, the fever subsides considerably.

The characteristics of this eruption differ with its seat. When occurring in the hollow of the pastern, which it does in about ninety per cent. of the cases, the vesicles, at first, are distinctly marked; but owing to the contagious nature of the discharged lymph, self-inoculation ensures the extension of the eruption in the course of its gravitation. The movements of the leg, the flexion of the joints, displace the scabs, and thus aggravate the affection; so that in the hollow of the pastern we usually find an extensive confluent condition of the pustules, extending to the hoof, at first covered by a clear or amber-coloured, offensive-smelling lymph, which agglutinates, forming crusts more or less adherent in places, the swelling often extending up to the body, and the pain and fever being considerable. This condition may exist in one leg only, or it may affect two, three, or four; but one is usually worse than the others.

In some cases, the eruption and swelling are inconsiderable; in others, where, by ignorance of its nature, attempts are made to heal it by poulticing or astringent dressings, large pustules and extensive suppuration of the lymphatic glands in the groin ensue, which usually result in permanent thickening of the leg. When the eruption occurs in the hairless skin between the thighs, its vesicular and subsequent pustular characteristics are distinctly marked. If the animal is kept at work, the friction destroys the vesicles, pustules, and dessicating pock, and we may find it more or less confluent, and accompanied by considerable swelling of the udder in the mare, and in the sheath of the male animal; often extending along the belly to a considerable extent.

In some cases, the mucous membrane of the mouth and nostrils is the primary seat of the eruption, when the vesicles are well marked, but never reach the desiccating condition, owing to the fluids of the mouth or nose washing them off. From rubbing the affected leg with the muzzle, the mouth, lips, and nose frequently become inoculated. Several very well-defined cases of this kind have occurred within the last few weeks, and are now under treatment.

In all these cases, we generally find diffused eruptions running up the legs, and over the body. In some, the inside of the ear has been the seat of the eruption; in fact, while the hollow of the pastern would seem to be the principal seat of the disease, no part of the body is exempt from it.

When the disease is allowed to run its course without interruption, it attains its intensity about the ninth day; after which it gradually desiccates, brown adherent scabs form, which, in ten or twelve days more, will separate spontaneously and drop off, or may be washed off, leaving the surface completely healed but decidedly pock-marked.

When horses are kept too long at work, or improperly treated by which means the regular course of the disease is prevented, or interrupted, the skin and deeper tissues become highly inflamed, extensive sloughs and deep fissures are formed in the heels, which are tedious and troublesome to heal; recovery is thereby protracted, and is always more imperfect, as thickened skin and hairless patches are produced.

The disease is never fatal, and when properly treated, especially if not too much interfered with, it will run its course in about three weeks, leaving the animal none the worse.

In the grooms and one of the students of the Veterinary College, who were accidentally inoculated, it produced symptoms which were identical with those of vaccination. Most of them were affected on the hand. For about three days they complained of lassitude, itchings and swelling of the hand, with a vesicular spot with a diffused red areola, the swelling in most of them extending up to the arm-pit. On the maturing of the vesicles the fever subsided, and the regular stages of vesicle, pustule, and desiccating pock, followed one another in regular succession, the scab falling off about the tenth day from the appearance of the vesicle, leaving a well-marked depression of the cuticle resembling in all respects that produced by vaccination.

## SURGICAL AND PATHOLOGICAL NOTES.

BY J. WOODROFFE HILL, F.R.C.V.S., WOLVERHAMPTON.

*Cancerous Disease of the Liver and Spleen, with Complications.*—I have sent, per train, the abdominal and thoracic viscera of an aged retriever dog (about nine years). The following is the history of the case :—

On the 13th of this month I was requested by Miss Walker, of Bromley House, Penn, to visit the dog as to indisposition. I found the patient dull, with drooping head, downcast countenance, and disinclined to move ; when made to do so, the gait was stiff. There was a general tympanitic condition of the abdomen, with marked fulness and tenderness over the hepatic region ; the respiration was quickened, and pulse hard. I was informed that four large doses of castor oil had been administered, but without producing any movement of the bowels. I gave it as my opinion that the liver was the seat of mischief—that the organ was blocked, and its functions suspended.

The patient was removed to my infirmary, and enemas were given, which brought away a quantity of orange-coloured matter. A dose of aloes and calomel was afterwards administered ; but this was soon returned, together with a quantity of bile. The right side over the region of the liver was rubbed with stimulating liniment, and the animal made comfortable. All food being refused, milk and lime-water was administered.

14*th*.—Condition about the same ; food still refused. Bowels constipated ; urine scanty and high-coloured ; membranes yellow-tinged ; patient continually lying on the abdomen. Enemas and liniment to side repeated.

15*th*.—Bile vomited ; breathing more laboured, and pulse increased ; hepatic pain increased ; bowels unmoved. Castor oil administered, and general treatment as before.

16*th*.—Oil acting freely ; patient very weak and stiff, and would only lie on the cold ground. Brandy and egg was administered ; this was the only sustenance not rejected.

17*th*.—Weakness greater ; general symptoms increased in severity. Despite various measures adopted, the patient—some-

times better, at others apparently dying—succumbed on the 21st.

*Post-mortem Examination.*—This revealed very extensive disease of the liver. In mass it weighed $4\frac{1}{2}$ lbs., the greater portion being morbid growth. On both surfaces, and from the edges of the lobes, large cancerous tumours (encephaloid)* were present, two being fully as large as a hen's egg, lobulated, and with a broken surface; while various parts of the gland were dotted with prominent yellow spots of various size—some underneath the serous coat, others appearing above, with broken and ulcerated surfaces; some being extremely vascular and angry-looking, some of a dirty yellow and cheesy appearance, and others a rusty brown, and gangrenous. I made no section, in order that you might inspect the mass as it was. It is somewhat changed in colour, as I have kept it a couple of days to make sketches. The free portion of the gland, when first seen, was of a greenish-orange tinge, and had a nutmeg appearance. The gall-bladder was full of bile.

The spleen weighed 11 ounces; no portion of its surface was broken, but nodulated tumours were visible in several places, especially towards the edges.

The kidneys were large and pale, and surrounded with a fair amount of fat.

The stomach had slight patches of inflammation on the internal surface, but there appeared no organic disease.

The intestines were not opened.

I observed no deposit in any portion of the mesentery, though in many places it was attached to the diseased mass of liver, two pieces of which you will find detached with it.

The heart weighed 11 ounces; it was pale and flabby. The outer wall of the right ventricle was exceedingly thin, being barely the 16th of an inch; whilst the corresponding wall of the left ventricle was $\frac{3}{4}$ of an inch thick. The muscular structure was of a straw colour, and on section had a granular appearance.

Lungs congested.

As to the cause of the cancer, that must be speculative. I have known the dog for some years, and attended him at various

* I give this opinion from an external examination.

times, but only for accidents; and he has never before, to my knowledge, exhibited any symptoms of liver disorder. Prior to this fatal illness, I had him under my care in the early part of last year for an accident to the tail; and I think this worthy of mention, as it may throw some light on the case. He was brought into the infirmary with his tail bandaged up, the information I received being, that a wheel had gone over and broken it some three weeks before, and the gardener had set it by thus bandaging in Miss Walker's absence. On removing the bandage, off dropped the tail, a mass of putrefaction; a portion of the stump, which was also gangrenous, had to be immediately amputated. Daily dressings with nitrate of silver, and cleansings, soon effected a cure. Now it was quite evident to Miss Walker (who stood by) and myself that this tail had been literally crushed through in the first instance, and bound up with the living portion; hence the bandage and the pretended setting.

Under these circumstances, then, might the seeds of cancer be generated by the adjacent mass of daily increasing corruption, and be transferred by the lymphatics and veins to other parts of the organism? Its power of dissemination is wonderfully borne out in the human subject. According to Dr. Budd, there is clear proof that this may take place in two ways: "1st, by inoculation, or by the mere contact of a sound part with a part affected with cancer, without any vascular connection between them. 2nd, by cancerous matter conveyed by lymphatics and veins to other parts of the body."

"The dissemination effected in this way usually takes place in the direction of the current of blood or lymph. This is well shown by contrasting the organs that become infected from cancer of the breast, a part from which the blood is returned immediately to the vena cava, with the organs that become infected from cancer of the stomach, a part from which blood is returned to the portal vein." After giving several illustrations, he observes: "All these instances are sufficient to establish the fact, that cancer often becomes disseminated by means of cancerous matter which is conveyed onwards in the venous current. We have additional proof of it in the points of resemblance before noticed, between secondary cancerous tumours of the lungs and

liver, and the scattered abscesses which form in these organs in consequence of purulent Phlebitis."

I shall be glad to learn your opinion on this case.

[The viscera were so decomposed on arrival as to be unfit for microscopical examination. The liver, however, seemed to be affected with cancer. The case appeared to be rather of an unusual character.]

---

## CASES OF HORSE-POX.

BY "DIOGENES."

THE following is a brief account of two cases of Horse-pox (or "Stomatitis Pustulosa Contagiosa"), as they occurred under my observation.

### CASE I.

A bay carriage-mare, five years old, had only been purchased a few days, and on April 5th her attendant informed me she had a sore place just behind the ears. I attended and examined the animal, and found a somewhat diffused sore patch in the position before-named. It was very tender to the touch, it having been abraded by the bridle. There was some swelling round the patch, and the superficial lymphatics were corded. Pulse 44; respiration normal; visible mucous membranes slightly injected; temperature per rectum 102°; submaxillary glands swollen, but soft to the touch and rather tender. I examined the lips and mouth carefully, but could not detect any vesicles, but there was a faint, disagreeable odour pervading the breath; the appetite was good. I prescribed half-ounce doses of the sulphate of soda, in dry bran-mash or a pint of water, twice daily, and a water-pad to be kept on the inflamed part.

*6th.*—Swelling round the patch much less; pulse 42; submaxillary glands still swollen and tender; respiration normal; temperature 102°; slight cough; appetite good. On the top of the withers, and on both sides, reaching as far back as where the saddle would rest, was an inflamed patch, studded irregularly with a pustular eruption, in different stages of development,

though none of the pustules had yet burst. There was swelling, heat, and some cording of the superficial lymphatics; and as there seemed a chance of its becoming confluent, and perhaps losing a patch of hair, I directed the water-pad to be placed on the part, and the Sodæ sulphite repeated night and morning; diet to consist of mashes and hay.

*7th.*—Symptoms much the same, except that the temperature rose to 103°, and pulse 46; continue same treatment.

*8th.*—Patch behind the ears crusted over; several pustules on back discharging a thick, amber-coloured fluid, of the consistence of thick gum; swelling less; pulse 44; temperature 102°. Several small nodular enlargements, about the size of a small pea, were now to be felt about the quarters, which were tender to pressure. Ordered medicine to be given once daily, and continue water-pad.

*12th.*—No important change took place until the 12th. On this day the pustules on back were healing; the nodules about the hind quarters were less hard, and not so tender, and there was a rather large sore patch on the inner aspect of the heel of the off hind limb. This was discharging the before-mentioned amber-coloured fluid; pulse 42; temperature 101°; submaxillary glands less swollen and less tender. Discontinue medicine, leave off pad, and apply oil to encrusted parts.

From this until the 18th the animal continued to progress favourably, the nodular enlargements *never* discharging, the morbid material appearing to get vent at the patch on the off heel.

This patient went on favourably, the pustules healing, and the large ones, when healed, leaving the characteristic white spot. On the 26th she was taken out for a drive, and nothing was perceived unnatural, except that she sweated rather more than formerly.

### Case II.

The subject of this case was a very pretty bay pony, a gelding, six years old, a great favourite, having been much petted. On April 14th I was sent for to see him, but being absent on my rounds, the groom administered a cordial and diffusible stimulant, as the animal was shivering, he said. On my

arrival, which was shortly afterwards, I found my little patient standing in one corner with his back arched; extremities cold, though the groom had placed three rugs on him; pulse 48, small and hard; temperature 103°. I gave some Æth. chlor. in cold water, directed the legs to be well hand-rubbed, and woollen bandages to be applied to the limbs. Called again at 10 p.m.; pulse 46, much fuller and softer; back not so arched; eyes not so anxious; had eaten a little mash; temperature about the same; mouth hot, and breath fœtid; submaxillary glands somewhat swollen and tender; examined mouth, found no vesicles; mucous membranes slightly injected. Ordered half an ounce of Potass bitart. to be given in linseed tea.

15*th.*—Pulse 46; body hot; temperature 103°; sickly odour still pervading the breath; had eaten a little mash; pustular eruption appearing here and there about the neck, shoulders, and elbows on near side, and a patch as large as a shilling at the root of the mane, just where the collar would rest. Ordered Sodæ sulphite ʒiij. twice daily; mash and hay diet.

16*th.*—Pulse 44; temperature 102°-1; breath less fœtid; extremities warmer; pustules oozing from their apices the amber-coloured gummy fluid before-mentioned. Discontinue medicine; allow a little corn. Very little alteration until the 21st, except that small nodules might be felt generally over the skin, and one pustule formed about the root of the tail, superior aspect. This patient continues to progress favourably, the crusts falling from the pustules in succession, and he is now convalescent.

I have just had a grey cart-horse brought to me with his legs a mass of ruptured vesicles; but he works regularly, and his health does not appear to be much disturbed.

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## A REMARKABLE CASE OF ANIMAL ELECTRICITY.

BY W. WOODS, F.R.C.V.S., WIGAN.

[The following remarkable case is published, at our request, by one of our most competent and careful contributors. The subject of dynamic electricity of organised beings is one of great interest, and even of importance, and has at various times received much attention. For very many years it has been known that electricity was generated or developed in animals under various conditions, and most people are familiar with the faint crackling sounds and bluish sparks produced by

combing the hair of certain females, or stroking the fur of a cat in the wrong direction; and in Canada and other cold countries it has been often remarked that the human body is converted into a conductor of electricity, it being possible to light a gas lamp, when the necessary electrical excitement was induced, by merely placing the finger near the jet. The *Globe* lately referred to some facts given by a Mr. Mitchinsor, an African traveller, in a narrative of his exploring expeditions in West Central Africa, which bear on this subject. He states that one evening, when striking an African native, in a moment of anger, with a cow-hide whip, he was astonished to see sparks produced, and still more surprised to find the natives themselves were quite accustomed to the phenomenon. He subsequently found that a very light touch, repeated several times, under certain conditions of bodily excitement, and in certain states of the atmosphere, would produce a succession of sparks from the bodies of native men, as well as native cattle. A lazy nigger, it seems, yielded none of these signs of electricity—a rather unfortunate circumstance for his more active brethren, who may possibly come in for a share of undeserved flogging at the hands of future travellers in search of electrical phenomena among the human race. Mr. Wood's case is unique, so far as we can ascertain, and it would have been interesting to have noted the effect of touching the cow in a dark place. The animal appears, for the time, to have been a veritable magazine of electricity—a kind of *Gymnotus electricus*, in fact, only, unlike the South American eel, the cow herself received as well as gave the shock.]

On the 21st of February last I was requested to visit a dairyman's cow which had calved the previous night, the owner stating that he did not understand what was the matter with the animal, as every time he touched her a trembling sensation ran up his arm, and he involuntarily twitched it away. He seemed perfectly astounded, and kept impressing it on me that he was not afraid of the cow, but he could not help shaking when he touched her. I visited the cow, and when I placed my hand upon her, I received a perfect electrical shock, the animal evidently receiving the same, for as often as she was touched by any one she bellowed, and jumped forward apparently terrified. The pulse and temperature it was perfectly impossible to ascertain. The owner was unable to milk her, as she went almost wild when touched, but was perfectly tranquil when not meddled with, with the exception of a wild look about her eyes. No matter how many times the animal was touched, the same result followed. With great difficulty I administered a strong saline purgative, combined with fifteen croton beans, followed in a few hours by a pint of linseed oil containing ʒss. chloroform.

At night the cow was considerably better, and the following morning I was pleased to find her quite convalescent.

# Editorial.

## THE PROTECTION OF THE PUBLIC AND THE PROFESSION.

THERE is at last the prospect of an attempt being made to protect the public and the profession from imposition and injury, by seeking to obtain an Act of Parliament to render it a penal offence for any unqualified person to assume the designation of Veterinary Surgeon, or any other title which may be conferred upon members of the Royal College of Veterinary Surgeons. It is a matter for much regret that the attempt is only to be made now; but better late than never. Every one interested in animals and their humane treatment, no less than in the promotion of veterinary medicine and the preservation of public property, will, we are certain, share with us in the hope that the effort to obtain this enactment may be crowned with success. For years we have urged the necessity for this legal protection of our title, and have often and over again demonstrated that the public and humanity will gain even more largely by it than the profession. There is nothing of the "Free Trade" cry against trade "Protection," to be dreaded in this movement. It is simply instituted to guard the public from imposition and loss, to protect animals against improper and cruel treatment, and to shield the profession from the wrongs and injury incompetent and irresponsible persons may, and do, inflict upon it, by pretending to possess qualifications to which they have no claim. It is grossly unjust to allow such imposition and injury, and we have all along felt certain that such a state of affairs only needs to be exposed to be remedied. It is a duty imposed on every loyal member of the profession to strive to the utmost of his power to procure this penal clause, and so rescue his calling from serious peril and unmerited obloquy. We are quite sanguine of success; but feel that success will not be achieved without labour and anxiety, and the aid of those in Parliament who are interested in everything likely to promote the public welfare.

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## ON THE PROSPECTS OF VETERINARY STUDENTS.

BY J. H. STEEL, M.R.C.V.S., ROYAL VETERINARY COLLEGE, LONDON.

(*Continued from page* 273.)

OCCASIONALLY a young man will find that collegiate successes, and a sense of fitness for scientific work or teaching, qualify him for some one of those scientific posts which occasionally require filling. He will need all his energies and influence to place him in such a position, for in this country a man must generally have given public proof of his fitness for such a post. Abroad they often decide the matter by examination, which includes the delivery of lectures and demonstrations in the case of candidates for teaching posts. In England, a man who aspires to a public position must stand the test of publicity, must be able to inspire a certain amount of respect, to speak and write with facility, and to constantly court criticism. He must be prepared to work for the profession, to be found fault with, and never to give reason for calumny. This is *not* easy work, and since his scientific position

will be considered, to a very great degree, payment for his services, he will not find that, given an equal amount of professional skill, scientific work is so remunerative as private practice. Posts of this kind at present are very few, but, perhaps, as numerous as the supply of men fitted for them; at our schools, at agricultural colleges, the Brown Institution, etc., vacancies occasionally occur, while we sometimes hear of Government appointments in the colonies. The status given by these positions entails in due time the labours of professional politics, and constant keeping up with the times, whether in acquaintance with the latest scientific work or in forwarding professional movements. There are some rewards for such a life of toil. Professional success of pupils, happy completion of scientific work, the applause of fellow-workers are dear to the soul of the ambitious man.

There is a growing fashion among our large business firms—railway companies, brewers, and others—to have their own veterinary surgeon. They generally give a moderate remuneration, and allow the holder of the post to utilise his spare time in private practice. They expect the officer to exercise general supervision over the health of their animals, to zealously exclude Glanders and such diseases from their stables, to ensure the purchase of only sound and suitable horses, and to restore all sick and injured animals to health as soon as possible. They frequently demand more than a professional man is prepared to do—book-keeping, time-taking, etc., but when they do so, must be taught the position of a veterinary surgeon; such posts give a young man a fair amount of practice and sharp pecuniary supervision. His employers look closely to his results, and do not hesitate to say when they are unsatisfactory. The work is not light, so that the permission to practice privately is almost a dead letter, so that we must not look upon these appointments as sufficiently lucrative to be considered permanent. They are means of attaining skill, and are posts of observation for something better. They serve very well until a young man attains that gravity of demeanour, and amount of development of facial capillæ so useful to the practitioner as inspiring due confidence.

An *assistanceship* has the advantage of professional supervision by the employer, necessarily a man of greater experience. It enables a young man to learn much, and the minutiæ of varied forms of practice; he can thus fit himself for his duties when he has the opportunity of launching into independent professional existence, and this will give him that practical habit of mind which will materially cut short the period of professional waiting, essential to the commencement of practice "on his own account." He also is compelled to attend to professional duties, which is a useful stimulus to those of us who tend to laziness; and he will be enabled to be sure to go only with a well-established practitioner, with whom he can see much professional work. If he can manage to become assistant with a view to partnership, let him enter into a definite agreement. Many a practitioner advanced in years, who begins to find professional harness hang rather heavily, and who has no son to succeed and help him, though with a fair competency, hardly likes to abruptly break the ties which bind him to his life's work, he can well manage to glide gently into the repose of which his labours have rendered him desirous—such a man ought to readily embrace any opportunity of introducing fresh blood and modern ideas into his business, and the preliminary assistanceship stage enables him to select a fit successor.

*Partnership* is often adopted by the young man with some spare money. There are several causes which may induce an established practitioner to take such an one in hand—rapid spreading of practice, entailing increased work and establishment; need of money to bring about such an increase as will suffice for support of two; and the need of a working partner, to relieve excessive labour and secure relaxation essential to health and well being. These are

legitimate reasons, but the young man should always well survey the course before him, for it is not always so satisfactory.

When a young man wishes to start in practice for himself, he may do so at home or abroad. As a rule, it is not a good thing to go into a little-known country, on speculation of its proving a fit field. Some official post is advisable as something to fall back upon. *India* supports a few English private practitioners, and might more. The colonies are developing large cities, which require professional men ; the value of live-stock in them, however, is generally low, and therefore practice of veterinary surgery unremunerative. Local influence often gives a man a good start in such cases, but he must be prepared for the shrewd practical bearing of colonial men. Foreign countries seldom are open to English practitioners, for veterinary practice is often regulated by Governments, and English qualifications not recognised. America is a very decided exception to this rule : an able well-qualified man, it seems, can there gain a professional position and remuneration with rapidity.

*Practices* are constantly for sale, and the purchaser must remember that he is only able to purchase the "good-will." Much of the value of the bargain depends upon his skill in keeping clients together. Some customers prefer to retain the services of the oldest practitioner in the place, and will leave the young fresh arrival. Others—indeed many—will try you, to see "How you get on." Some will only have been awaiting some decent opportunity of changing their veterinary adviser. Altogether, however, a good man need fear little from these influences. A small extra degree of energy will hold the practice together. He will not repent his bargain. A man imperfectly acquainted with professional work will find a "good-will" but a poor return for hard cash. Some will prefer to keep themselves going with their money while they "make a practice." In this, energy and proper choice of locality will probably make them successful, but it is hard work, and requires, as a rule, a good deal of pluck and dogged determination, as well as unlimited capital. This is not always so, for in some parts of the country, it seems, clients crowd to any qualified practitioner who will come to save them from the hands of "quacks." There are not very many such untrodden fields in England and Scotland now, but in Ireland, we are inclined to think, there is "lots of room." A man who tries new localities must be prepared to combat malign statements of the empirics, and will find that to maintain professional dignity is not always easy work. He is doing good pioneering work for the profession, and is an apostle of science. In our large towns and thriving agricultural districts it is not always easy to see an opening. Generally practitioners seem to be as numerous as the place can support, and the latest comer holds the position least favourable in the struggle for existence. He is apt to be looked upon as an interloper by the public as well as by his co-professional brethren, and will often have to wait for some time until he becomes established.

These conditions have in the medical profession, and in ours to a much less degree, produced specialists and literary professionals. The latter seldom, among veterinary practitioners, soar higher than essays contributed to local papers or read at local meetings of agricultural societies. We are not inclined to find fault with these. When properly executed and carried out, general essays should tend to inspire employers of veterinary surgeons with a sense of their own ignorance of disease, and of the value of veterinary science. Care must be exercised to avoid any tendency to treat rival practitioners with disrespect, and the resort to undue advertisement of an unprofessional character. *Specialism* in veterinary surgery enables us to recognise the consulting practitioner and the canine surgeon, and certain others. Thus we lately heard of a veterinary dentist in America, and we are informed of a gentleman of high professional standing who is about to make the eye a speciality in the same country. So long as all veterinarians have to pass a

general examination, and we avoid the "speciality degree nuisance," which tends to disintegrate the medical profession, the inclination to follow some special branch of practice can do no harm. It is a necessary consequence of the surrounding conditions of each practitioner, which produces salutary diversity.

This leads us to review the different kinds of practitioners. To the best of our ability, we have already given our ideas of the nature and duties of the army practitioner, professor, scientific officer, and executive government officer. There are two professional positions which we may hastily pass over as not likely to prove attainable by a young man—those of administrative government officer, and consulting veterinary surgeon. The latter should have made examinations for soundness a speciality, should have a general acquaintance with professional work, and should have done something which specially tends to give him the confidence of his co-professionals. In proportion to the position which he occupies should be his fees; he will require to keep a good establishment, and to be plausible and ready-witted.

General practitioners may be divided into those of town and country. The country practitioner requires a general acquaintance with mixed practice, to be accustomed to work with a deficiency of assistance, and to have a constitution fitted for long journeys at all hours and seasons, with irregular meals; he must be especially skilful in certain operations, as castration and parturition cases, and will find a general knowledge of farming systems valuable. His clients will be rough and hearty but shrewd men, who are familiar with domesticated animals, and often not by any means contemptible hands at diagnosis. He will find that his clients will appreciate him more, and rank him as one of themselves, if he shows up at a "meet" occasionally, and rides well and with judgment. He must be prepared for an occasional "brush" with an unqualified man, and if he lives in a small town, must exercise great care as to his general behaviour, for in small places gossip is rife and not always unexaggerated. He must keep a few good horses in his stables, and must especially obtain one or two of those long, low mares, with some breeding, that many of us know well. They will do their rounds to-day, and be ready again to-morrow, are quiet and business-like, and know how to make the most of every opportunity to rest. They are safe for night-work, and can find their way home from anywhere. If you do not know the stamp of animal I allude to, correct your education in this matter as soon as possible; and when you get such a servant, do not part with her readily.

*Town practitioners* have generally a smaller range and more opposition. Their practice is mostly among horses, and they find that paved streets and roads render their carriage and horse bill for wear and tear somewhat heavy during the year. They are generally in a position to manage their business more on system than their brethren in the country, to have more quiet evenings and hours of relaxation. They require to know the ins and outs of horse-dealers, to attend to examinations for soundness, the treatment of lameness, etc. Often they find a forge essential to the keeping of their connection together, although many prefer to underlet a forge situated on their premises, which I look upon as rather a good plan. The stamp of practice in town is much varied. In low-class neighbourhoods it is rough but remunerative. Cases of Glanders, Grease, Canker, etc., frequently occur, and the patients are huge dray horses, or broken-down, worn-out nags, terminating an easy life in that purgatory, a night cab. In aristocratic neighbourhoods it is said that there is one great drawback to success—the difficulty in getting bills settled. The practice is highly interesting, for the patients are well-bred and kept, but a drawback is the obtrusive stud-groom, who attempts familiarities, but

must soon learn his place ; also the knowing stableman, and the obsequious dealer. Under no circumstances does a practitioner more constantly require to rest upon his professional dignity. In these town practices litigation frequently necessitates appearance in the law courts. This should not be a difficulty to a man who knows his duty. Regardless of parties, he recalls all he knows of his case, carefully balances it in his mind, forms his conclusions, and by straightforwardness baffles the cunning of those unaccustomed to such qualities. Among the wealthy business classes a good connection may be formed ; they often endeavour to exert their dignity, but pay well and promptly. Contract work is especially useful as a means of securing a fixed income and enabling the practitioner to have a salutary degree of independence. It is fairly remunerative, and forms a useful nucleus of a practice—prices vary much in different towns. The system attains its greatest development among the great business firms of the north. In the black country the veterinary superintendent of pit-ponies will find that subterranean hygiene is no easy task. He will meet injuries of a frightful extent, chronic ulcerations and diseases of a low type ; and must be prepared to descend "into the very bowels of the earth" at all sorts of hours, and must not expect to find the journey one of luxurious ease.

To many of you these descriptions of practices will be an oft-told tale, but not to all ; many of you will be able to suggest additions to the list.

When in practice, we shall often find ourselves connected with agricultural societies, either as honorary members or as professional officers in cases of shows—in some cases, even as judges ; also we may be called upon for professional opinions on contagious disorders and cases of cruelty. In all such emergencies we will simply require to act independently, and as our scientific judgment suggests. Beware of sentiment, especially in cruelty cases. It is at daggers-drawn with science, and so cannot prove beneficial to you. We should obtain entry, when possible, to medical and other scientific societies—it will improve our position, and that of the profession. We may, perhaps, not be able to make time to take any very active part in their proceedings, but we may often be able to put in a word at the right time and so to command respectful attention. An occasional letter to a local paper, or a "leader" written for a friendly editor, will prove useful to a practitioner ; but let him have a care lest the literary man render him ridiculous by ill-advised puffing. Contributions to general literature seldom come from the pen of the veterinary surgeon, though these would be valuable results of leisure hours, but we have been described as "not a writing profession." Too few veterinary practitioners have favoured us with professional works, but this only serves to throw into greater relief those who have thus "done the State some service." Continental veterinarians have even contributed to general medical literature works much appreciated, but we have not *yet* done so.

In performance of his duties to the profession, a practitioner must be constantly zealous in maintaining its *status*, by upright and sober behaviour, by independence of feeling and sentiment, by gentlemanly deportment, and by careful selection of associates ; also by defending it with tongue and pen. He should use his best endeavours to promote professional unity in consultations and the exigencies of practice, in his writings; and by unanimity in law courts, and avoidance of litigation he must guard, lest "difference of opinion alter friendship." A most powerful means to this end he will find in veterinary societies, which teach men to know, respect, and appreciate each other, especially when the meetings are associated with excellent dinners, after the custom adopted in some parts. It is incumbent on every veterinary surgeon to take interest in professional progress, to jealously examine every proceeding of the ruling powers, and to make his voice heard when necessary at

annual meetings, and not to spare his communications to professional journals on political questions; to regularly attend annual meetings, and to give his vote for the best and fittest men, sinking all personal feeling in his professional duty; to promote sociality by attending at the professional dinner after the annual meeting, and to assist the college authorities in educating the coming race of professional men; this he may do by conscientiously educating to the best of his ability, especially in practical matters, young men who come under his care as pupils, improvers, and assistants, as well as by recording his experiences in professional journals, and by forwarding specimens and notes of cases as a basis for lectures and demonstrations.

I have endeavoured to show you what you have to look forward to, and in spite of some errors of omission and of commission, may have directed the thoughts of some of you into new channels.

The profession is making rapid strides, both in general and professional education of its graduates; also in its efforts for the repression of empiricism, for securing due professional remuneration and such privileges as are accorded to human medical practitioners. Text-books are increasing in number and quality, the professional press is becoming more powerful and better known. Government offices are increasing, and we are becoming necessary to the public. With these favourable conditions we have but to advance at a good round pace, shoulder to shoulder, and we cannot fail to attain a victory and secure an advantageous position on the "battle-field of life."

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## THE ADVISABILITY OF ESTABLISHING SUITABLE AND ADEQUATE CONVENIENCES FOR VETERINARIANS TO MAKE *POST-MORTEM* EXAMINATIONS, ETC.*

BY GEORGE A. BANHAM, M.R.C.V.S.

MR. PRESIDENT AND GENTLEMEN,—As there is little business or matter for discussion to-night, I beg, with your permission, to bring before you a subject which has more or less occupied my thoughts ever since I entered the veterinary profession. It is one, I have no doubt, will meet with strong disapproval, but I hope you will excuse me for venturing to bring it before you; for if you approve of the idea, and consider it worthy of discussion, I shall be satisfied; or if you think it useless and unprofitable, I shall have the satisfaction of knowing that what I think as useful, others, much better able to judge than myself, consider otherwise, and *I* shall have learned something, and hope, therefore, that if one member only profits by a meeting, it cannot be said to be wasted. Moreover, I consider we are all bound, as members of this Society, to lay before the members any suggestion we consider worthy for them to hear, and obtain the value of their opinions on the matter, and so arrive at satisfactory conclusions. Therefore, gentlemen, with this apology, I will lay the subject in question before you for discussion. It is mainly based upon the following questions: 1st. What convenience have the London practitioners for properly carrying out a *post-mortem* examination? 2nd. What means is there for the destruction of animals suffering from contagious diseases? 3rd. How may these objects best be obtained?

I may say that ever since I have had any connection with veterinary science, I have always found a difficulty in being able to obtain proper and adequate facilities to educate myself to recognise the appearances and *post-mortem* lesions of diseases in our patients. May I ask whether we have

* Read before the Fellows of the Central Veterinary Medical Society, on April 15th, 1880.

learnt sufficient morbid anatomy, and know all the *post-mortem* lesions presented in our animals, at the end of our collegiate education? Answering for myself, I say decidedly, NO, but that we are only then in the position to profitably commence making autopsies. Therefore, in order that practitioners may become thoroughly acquainted with *post-mortem* lesions—the utility of which, I think, few will deny—we ought to continue our necroscopic examinations of all the subjects which die under our charge so far as we possibly can, and so "follow up" our cases, so that ultimately we might arrive at some satisfactory conclusions.

This, gentlemen, would not only educate us to recognise the lesion, and be more in unison with each other relating to the lesions found, but I think we should also find that in some cases, at least, our treatment would be materially altered, and it would tend to increase our diagnostic and prognostic powers for similar cases in future. It is useless for me to comment further upon the utility of the subject, for they are better known to you, perhaps, than myself. So we will pass on to consider what conveniences practitioners have for educating themselves in this direction, after they have left their *alma mater*. These are very few and inconvenient. Thus, the only three sources open to us are: 1st, The knacker's yard; 2nd, our client's stable or yard; 3rd, our own. The knackers' yards are not very enticing, so far as I know them. We usually find they (the knackers) put as many obstacles and objections in our way as possible. For instance, I have frequently sent word that I would call at a certain time to look at a certain horse, and when I have called, I have invariably found the animal already cut up and in the copper, and a few pieces which looked "rotten" and "black," saved for my inspection, with the epithet, "That's what's amiss, sir," and I know a great number of *post-mortem* examinations end in the same way; and I will leave you, gentlemen, to say how much the wiser we are for such information. Even if the carcase is saved, we have to stand about in a cold, draughty, wet yard, and be very careful how long we keep the men, and what we ask them to do, or we are censured for wasting the men's time, on the one hand, and for spoiling the hide or carcase on the other; and if we are not extremely careful what we say, we are scarcely treated with civility. And finally we have to pay the men well in the bargain, which to most practitioners is so much loss, for I am told few practitioners charge for *post-mortem* examinations. Moreover, by resorting to such places we are, in my humble opinion, lowering ourselves in public estimation. This we cannot very well afford to do at present, and this seems to be an age when people like to see things done nicely; and how much nicer it would sound if we told our client that, if he would allow his animal to go to the "Veterinary *post-mortem* room," or "mortuary" (or whatever name you care to give it), we would make a *post-mortem* examination, etc.

As far as using our clients' or our own stables or yards for such purposes is concerned, I will simply leave to your own conscience to say whether either places are adapted for the purpose. These, then, gentlemen, are the means at our disposal for our work.

Now, must we continue in this dirty, cold, wretched manner, and be always dependent upon these uncivil horse-slaughterers for any little aid we require in scientific investigation? or has the time arrived when London practitioners at least should begin to see a way to improvement?

Looking at the second question, viz., the means for destroying animals affected with contagious diseases, I must say, so far as I am acquainted with them, they are very inadequate. If a horse, for instance, suffering from Glanders is taken to the knacker's yards, he is killed and boiled, and sold for cat's meat in the usual way, and I believe the hides and bones are also utilized.

If I am wrong in this matter, I ask you gentlemen who have had more experience in these matters than I have, to correct me. I will not dwell upon the good or evil effect of this method, but I ask you to give free ventilation to your valuable opinions upon this matter for the benefit of our members. I believe the Privy Council orders are that they should be burned, or subjected to air of a certain temperature, for a fixed time ; but is this ever done? or are there conveniences for carrying the order out if enforced? If not, ought we not, for example's sake, to establish such a furnace, where animals affected with contagious diseases could be "cremated" at a nominal cost to the owner?

We have already too often seen that government authorities seldom, if ever, take up *our* cause. If this could be done, would it not bring us under their notice, by showing them that we have the good of the public at heart, and endeavour to advance without their aid—if we can only do so without a great pecuniary loss?

These, gentlemen, are the points I wish to discuss with you to-night, and I will provisionally draw your attention to the following questions, which I hope I shall be able to show you are fully substantiated, and worthy of your consideration.

The questions are—Are there any means by which the London practitioners can provide a suitable room and convenience for carrying out their *post-mortem* examinations? and also for the proper destruction of animals affected with contagious diseases? I will, for argument's sake, answer both these questions in the affirmative, and will endeavour to substantiate this answer by picturing an establishment which might be formed, and then point out the *pro et con* arguments as they present themselves to me.

Thus, a limited company could be formed, and a suitable piece of land (or even one of the existing knacker's premises) purchased, upon which suitable buildings should be erected and fitted with all the necessaries for properly conducting and carrying out the business of horse-slaughtering. It should also be fitted with proper conveniences for the destruction of animals affected with contagious diseases, and a room where practitioners could make a *post-mortem* examination with all the comfort that such circumstances will allow.

The arguments in favour of such an establishment as this are numerous. Thus:—

(*a*) Practitioners would have a convenient and properly-fitted place for examining dead animals.

(*b*) It would also serve as a place for procuring pathological and physiological specimens both for veterinary and human medical science and teaching schools.

(*c*) It would serve as a place where the veterinary students at the Camden Town School could be brought by their teachers to have *practical demonstrations on morbid anatomy, and learn what to look for, and how to find post-mortem lesions*—a branch of veterinary science which, I think you will all agree with me, is too much neglected.

(*d*) It would serve as a place where subjects could be obtained, and students brought to have practical lessons in *operative surgery* upon the *dead* animal. This would be the means of teaching them how to handle and use their instruments, and properly perform most of the ordinary operations—a branch of science which in itself is well worth erecting a building for, and I am sure it would be well appreciated by our younger members and students.

(*e*) It would be a place where students would be able to obtain any bones or parts of the animals (such as brains, etc.) which they might require for any special study, at a nominal cost.

(*f*) Such a place would render us independent of the present wretched knackers' establishments, which, to my mind, would be a great advantage.

(*g*) For the purpose of properly destroying all contagious diseased animals (especially Glanders); and it would be well to petition the local authorities to enforce persons to send such to this establishment, and that only, thus forming a centre for their destruction.

(*h*) Lastly (but not least), I think it would be a very good establishment for practitioners to invest their money in, for, if properly conducted, it could not help paying a very good percentage; especially if members of the profession would make it a point to advise their clients to send their dead animals to the establishment (which of course they would do if they wished to make a *post-mortem*, or had shares in it).

(*i*) There is one other addition which might be added with great benefit, and I may say it would not be complete without it, and that is, that a *paid veterinary post-mortem examiner* should be connected with it, whose duty would be to communicate the *post-mortem* changes to any of the shareholders who particularly asked him to do so, and in this way practitioners who were unfortunate enough to live a great distance from the establishment, would be able to have the autopsy made for them. And also to take notes of any extraordinary pathological or other changes which attracted his attention in the animals brought during the daily routine of business.

These, gentlemen, are most of the advantages which at present strike me that might accrue from such an establishment.

We will now look on the other side of the question, and see what disadvantages such an institution might present.

Thus, some may think that our connection with such an establishment would be degrading to our profession, and lower us in public estimation. If I thought this for one moment, I would give up all idea or hopes of ever having anything to do with such a scheme; but when I think of the matter in its proper light, all such drawbacks vanish, and I think it would be the same with the public at large, or at any rate with unprejudiced, thinking men, who, in my humble opinion, would neither think it degrading nor useless to the profession, but would, on the contrary, praise and give us credit for the steps we had taken to advance pathological research, etc., in veterinary science. Again, some might say, as it was suggested to me, that it looks rather like a "*doctor setting up as an undertaker*," and I must confess, when viewed superficially, it does; but when we consider what inadequate means there are for veterinary surgeons and students to obtain conveniences for veterinary research, and that such bad regulations are in existence for the destruction of animals affected with contagious diseases, I think most people would forgive us, and look at it in the same light that we do.

We might even be accused of *killing* animals for the purpose of obtaining the carcase for its pathological value, and so forth; but here again, I must say this is only a supposition, and requires to be authenticated before we ought to entertain such ideas, and if we found such to be the case, I have not the slightest doubt we could face and correct the difficulty, with just as much efficacy as those who promulgated such accusations against us, although I am fully aware that such false statements are often very difficult to rectify.

Lastly, some of the local practitioners might say they would be put to a great deal of inconvenience by their local horse-slaughterers refusing them the use of their yards, especially if the knacker happened to find out that the veterinary surgeon was a shareholder; but this, I think, is a very paltry excuse for withholding such a useful establishment, for there can be little doubt that such petty enmity would soon be overcome by time and custom.

Now, gentlemen, I have given the reasons for and against the establishment of such an institution or company, and my reasons for bringing this

matter before you; therefore, I hope you will give free ventilation to your own opinions. Of course, those who care little about making *post-mortem* examinations and pathological research, and providing means for teaching our students, or places for our younger members to learn it, will, I have no doubt, *pooh-pooh* the idea, and say it is useless; these I would ask to keep their eye steadily on the pecuniary side of the question. But, gentlemen, I hope there are none of our members who entertain such ideas of advancement in our profession, and therefore I trust that those gentlemen who have their profession at heart, and are willing to provide and be provided with suitable and adequate premises for such investigation, will side with me, and assist in solving the problem I have laid before you to-night, or suggest a more professional and profitable plan to supersede it, by which we could overcome our difficulty and advance veterinary pathology in this country. Thanking you, Mr. President and gentlemen, for your kind attention, and I hope that my efforts may lead to a profitable discussion, although I must own they are rather short and insufficient, but yet I think I have sufficiently conveyed my meaning and ideas.

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## THE ROYAL VETERINARY COLLEGE *versus* THE PROFESSION.

In our correspondence column will be found the report of a Committee of Governors appointed to investigate the grievances of the profession against the subscription system of the Royal Veterinary College. From the admissions of this Committee, it will be seen that we were quite warranted in the course we adopted in exposing and protesting against the degrading system of competition the school maintains, a system which no one has yet ventured to defend, and which has done the profession great injury, while it has not benefited veterinary education in the slightest degree. If the recommendations of this Committee are adopted, the injury will be repaired to a slight extent, though the more serious features of the system yet remain. The skill of "learned professors," and the "services of an eminent Professor from London" should be worth more than the unskilled member of the profession who cannot boast of the prefix to his name. Instead of this the governors estimate them at very much less. This is promoting veterinary education!

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## ROYAL COLLEGE OF VETERINARY SURGEONS.

At the meeting held on May 25th, Mr. George Fleming was unanimously elected President for the ensuing year.

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## TESTIMONIAL TO PROFESSOR PRITCHARD.

On March 23rd, a meeting of students was held in the Royal Veterinary College for the purpose of presenting an address to Professor Pritchard, on the occasion of his resigning his professorship and retiring into private practice. The address was signed by 180 students, and was presented by Mr. Bartrum, the Secretary. It embodied the sentiments of the subscribers, and their expressions of regret at the resignation of Mr. Pritchard, concluding with an intimation that an artist had been engaged to paint his portrait.

Mr. Pritchard replied in suitable terms.

# Proceedings of Veterinary Medical Societies, etc.

## ROYAL COLLEGE OF VETERINARY SURGEONS.

### Annual Meeting.

THE thirty-seventh annual meeting of the Royal College of Veterinary Surgeons was held in the Freemasons' Hall, Edinburgh, on Monday, 3rd May. Principal Williams, of the New Veterinary College, Edinburgh, President, occupied the chair.

Present—Professors McCall, Walley, McFadyean, and Vaughan; Gen. Sir Frederick Fitzwygram, Bart.; James Collins, Esq., Principal Veterinary Surgeon to the Army; Messrs. Aitken, Anderson, Anderton, Baird, C. Baird, Bell, Blue, Borthwick, Boyd, Brock, Brown, Cartwright, Cameron, Connochie, Cunningham, Dobie, Dollar, Dudgeon, Elphick, Ferguson, Fingzies, Fleming, Freeman, Gentle, Greaves, Greig, Grey, junior, E. Grey, Hack, Hammond, Hunting, Johnston, Lawson, Lewis, MacCallum, McIntosh, Moir, Morgan, Prentice, Philp, Robertson, Alex. Robinson, Archibald Robinson, Rutherford, Scrymgeour, Simcocks, Spreull, Storie, J. B. Taylor, P. Taylor, T. Taylor, W. A. Taylor, Whittle, Woods, Wyper, and the Secretary.

The SECRETARY (Mr. Arthur W.Hill) read the notice calling the meeting, and also the minutes of the previous meeting, which were approved.

### Report of the Council.

The SECRETARY read the annual report of the Council as follows :—

The annual general meeting of the Royal College of Veterinary Surgeons was held on May 5th, 1879, in accordance with the provisions of the Charter, when the following gentlemen were elected members of Council in the place of those who retired by rotation, viz. :—John Wortley, Axe, Wm. Robertson, Thos. Wm. Gowing, Jas. Beart Simonds, Wm. Whittle, and J. Wilkinson Anderton.

The Council have to report that at their first meeting, held on May 27th, Professor Williams, of Edinburgh, was elected President, and the following gentlemen were elected Vice-Presidents :—Professors McCall and Walley, Messrs. H. J. Cartwright, G. Williams, Jas. Moon, and E. C. Dray. Treasurer, Mr. E. C. Dray, and Secretary, Mr. W. H. Coates.

The Council have the satisfaction to announce that on the obtainment of the Supplemental Charter granted by Her Majesty's Government in August last (a copy of which was submitted at the last annual meeting, and circulars issued to those gentlemen holding only the Highland and Agricultural Society's certificate), 124 have availed themselves of the opportunity offered, and have received the diploma of the Royal College of Veterinary Surgeons.

It has been suggested that steps should now be immediately taken by the Royal College of Veterinary Surgeons to obtain an Act of Parliament for the protection of the title of Veterinary Surgeon, or other titles conferred by them or empowered by Royal Charter.

In order to give further effect to the Charter thus obtained, the Council have found it necessary to make certain alterations and amendments in the bye-laws.

The following are the new and amended bye-laws :—

7. At a meeting prior to the annual meeting, the Council shall choose from among the members of the profession not less than six persons to act as scrutineers in the matters of the election of members of Council.

New bye-law to follow "No. 32"—

"That in case any student, after having attended the prescribed course, is prevented by any cause—the fault not being his own—from presenting himself for the first or second Examination, he shall, after having passed that Examination, be allowed to present himself for the one immediately following, by studying one term less than he would by the "Bye-laws 31 and 32," provided the full number of terms shall have been complied with."

"37. Bye-law annulled."

The Council have to announce that the two years' system of examination was brought to a close in January last, it having been extended to that period in order to admit those who, from various causes, had been unable to pass their examination to the satisfaction of the Court of Examiners.

The three years' system is now in full force, and has hitherto proved successful. The Examiners find that there is a greater amount of proficiency in the class of students who now present themselves for examination, and less re-examination of rejected candidates.

With reference to the changes in the Court of Examiners during the past year, the Council regret to announce the resignation of Mr. Robert Lewis Hunt, F.R.C.V.S., who, in consequence of failing health, was reluctantly compelled to relinquish his duties at the Cattle Pathology table

The vacancy in the Examination Board has been filled up by Mr. Jno. Roalfe Cox, who has been appointed to the "Horse Pathology table."

The Council have to report that since the last annual meeting eighty students from the different veterinary schools have received the diploma of the Royal College of Veterinary Surgeons.

The following students obtained Honourable Mention, viz.:—Messrs, Ernest Ed. Batt, W. J. Malvern, F. Gowland Rugg, Nicholson Almond, H. A. Rumboll, J. J. Crowhurst, G. Johnson, G. G. Mayor, Walter J. Palmer, E. Slipper, T. W. Cave, A. W. Briggs, Donald Gregory, H. T. W. S. Mann, G. Deveson, Theodore C. Toop, Sidney Villar, W. Caudwell, C. Taylor, and T. W. Lepper (Royal Veterinary College), with Great Credit.

The Council have had under their consideration a scheme for one uniform Matriculation Examination to be adopted by the respective schools. The scheme was generally approved, butas one dissented from the arrangement, the subject was deferred for further consideration.

The council elected the following gentlemen as Examiners for the Fellowship Degree, viz.:—Messrs. Fleming, Collins, Duguid, and the Dean of the College of Preceptors.

A special examination for this degree was held February 27th, 1880, when the following were admitted Fellows:—

Mr. Wm. Sheppard Wallis, Halstead, Essex.
„ M. Wiggins, Market Harborough.
„ Wm. Albert Russell, Army Veterinary Department, Dublin.
„ Thos. Simpson, Seel Street, Liverpool.
„ Isaac Vaughan (Prof.), New Veterinary College, Edinburgh.

## Prizes.

The Fitzwygram Prizes.—In order to increase the number of candidates, and to offer further inducement for competition, the donor gave notice that the competition for these prizes would not hereafter be limited to those who had passed with "Great Credit," but would be extended to members of the Royal College of Veterinary Surgeons who held their diploma for not more than two years.

Six candidates entered their names for the competition of these prizes in April, 1879. The written examination took place in London, and the *vivâ*

*voce* and practical examination in Lincolnshire. The only gentlemen who obtained the required number of marks were—

Mr. Edward Simpson Shave, Royal Veterinary College, First Prize ... ... ... ... ... ... £50
„ Thomas Herbert Lewis, New Veterinary College, Edinburgh, Second Prize ... ... ... ... £30
„ Wm. Frank Smith, Royal Veterinary College, Third Prize ... ... ... ... ... ... ... £20

The Royal Agricultural Society again offered their prizes for competition, when the following was the award of that examination :—

Mr. Wm. Alston Edgar, Dartford, Kent, £20 and Gold Medal
„ Wm. Frank Smith, Bromley, Kent, £10 and Silver „
„ Nicholson Almond, Clacton, Colchester ... ... ... £5 and Bronze „

The following letter was received from the Secretary of the Royal Agricultural Society :—

"Royal Agricultural Society of England,
"12, Hanover Square, London, W.,
"*Dec.* 16*th*, 1879.

"Dear Sir,—I am instructed by the Veterinary Committee to ask you to be so good as to ascertain from the Council of the Royal College of Veterinary Surgeons whether they could undertake to nominate Examiners for the Society's veterinary prizes and medals, so that identical examinations might be held simultaneously in Edinburgh, London, and, if necessary, in Dublin. The object in view is to promote a co-operation between the several agricultural societies, so that the prizes might be equally open to graduates of the Royal College of Veterinary Surgeons, whether they are resident in England, Scotland, or Ireland, and whether they have been educated at the Royal Veterinary College or at any other veterinary school.

"Your early attention to this matter will much oblige,
"Yours very faithfully,
"W. H. Coates, Esq. "H. M. Jenkins, *Secretary.*"

Communications have been made with the Highland and Agricultural Society in the hope that Scotland would unite in making the prizes general among the students, and the Council purpose to appoint examiners as soon as the agreement has been entered into between the two societies.

Unfortunately, however, the Highland and Agricultural Society, after due consideration, does not feel itself in a position at present to come to such an arrangement, hence the scheme must remain for a time in abeyance.

*The House Committee.*

During the past year the House Committee had their attention directed to a freehold property in Fitzroy Square, which was to be sold, and was considered might be made available for a college.

The Committee spared no pains or expense in interesting themselves upon the subject. A surveyor was appointed to value and inspect the property. It was considered, however, to be deficient in its appearance, and the rooms unsuited for the requirements of a college.

On further deliberation and after taking a legal opinion, the negociations fell through in consequence of certain doubts having been expressed with regard to the genuineness of the title.

The Committee, therefore, resolved to ascertain, by advertisements, whether suitable premises could not still be obtained. The replies received

were unsatisfactory, and failing to receive any assistance from Her Majesty's Government, the Council deemed it advisable that they should not leave their present building until some more suitable premises could be obtained.

In accordance with the terms of the lease, the house has been put under thorough repair, and a portion of the back premises pulled down and rebuilt, as it was considered to be dangerous.

*The College Fund.*—Some trifling subscriptions have been received during the past year, the only real increase being in the receipt of its dividends.

The following is the amount of stock and balance at the bankers :—

| | |
|---|---|
| Amount of Stock standing in the names of the Trustees ... | £1,513 13 4 |
| Balance at Bankers ... ... ... ... ... ... | 104 11 10 |
| Dividends ... ... ... ... ... ... ... | 44 9 4 |
| Total | £1,662 14 6 |

The following is the statement of the attendance of members at the Council and committee meetings :—

*Vice-Presidents.*

| | | | |
|---|---|---|---|
| Henry Joseph Cartwright | 6 | James McCall | 1 |
| George Williams | 4 | E. Coleman Dray | 6 |
| James Moon | 3 | Thomas Walley | 3 |

*Council.*

| | | | |
|---|---|---|---|
| Jn. Wortley Axe | 4 | Peter Taylor | 6 |
| Wm. Robertson | 2 | John Cuthbert | 3 |
| T. W. Gowing | 3 | Rd. Sam. Reynolds | 6 |
| Jas. B. Simonds | 2 | Francis Blakeway | 5 |
| Wm. Whittle | 6 | Benj. Cartledge | 4 |
| Jn. Wilkinson Anderton | 6 | Matthew J. Harpley | 7 |
| Major-Gen. Sir F. Fitzwygram | 4 | Geo. Fleming | 5 |
| Jas. Collins | 6 | Wm. Pritchard | 7 |
| Wm. Hy. Coates | 8 | Wm. Williams | 5 |
| Geo. Morgan | 7 | Hartley Thos. Batt | 8 |
| Jas. Freeman | 5 | Thos. Greaves | 7 |
| Alf. B. Proctor | 2 | Geo. Thos. Brown | 1 |

*Committees—Finance, House, and Selection.*

| | | | |
|---|---|---|---|
| Hartley T. Batt | 6 | M. J. Harpley | 4 |
| Henry Jos. Cartwright | 1 | Jas. Moon | 3 |
| Jas. Collins | 3 | G. Morgan | 2 |
| E. C. Dray | 5 | W. Pritchard | 3 |
| Geo. Fleming | 2 | J. B. Simonds | 2 |
| Jas. Freeman | 1 | P. Taylor | 4 |
| Thomas Greaves | 6 | Geo. Williams | 3 |

The Registrar has to report the death of thirty-five members of the profession since the last annual meeting. Among them may be mentioned the death of Professor Varnell, F.R.C.V.S., late Professor of the Royal Veterinary College. He was elected President of the Royal College of Veterinary Surgeons in 1865, and was a Member of Council for upwards of sixteen years. Also the death of Mr. John Cuthbert, of Leeds, a member of the Council, elected three years ago. He was also a Fellow.

A new Register will shortly be published containing the names of the new members of the profession, as well as those who have been recently admitted holding the Highland and Agricultural Society's Certificate, and the many alterations which have been made since its last issue. Copies may be had on application to the Secretary, price 1s. 6d., or 1s. 8d. post free.

### *Presentations.*

Presentations have been made to the library of the College by Professors Simonds, Williams, Walley, and Vaughan, and by Mr. E. B. Nicholson, of the London Institution ; also some interesting classified specimen grasses to the museum by General Sir F. Fitzwygram. The skeleton of a pure Arabian horse, and morbid specimens from India were presented by Mr. G. Fleming. Mr. Harpley also forwarded a photograph of the Veterinary Congress held in Hamburgh, containing a portrait of the late Wm. Field.

During the past year, in consequence of failing health, the Secretary has been reluctantly compelled to tender his resignation to the Council of the Royal College of Veterinary Surgeons, after holding office for a period of eighteen years.

The vacancy has been filled up by the election of Mr. Arthur Wm. Hill.

The financial statement is annexed. The balance in hand, after defraying the expenses of the year, amounts to £553 2s. 5d.

E. C. DRAY, TREASURER, *in Account with the Council of the Royal College of Veterinary Surgeons, from* APRIL 1*st*, 1879, *to* MARCH 31*st*, 1880.

| *Dr.* | £ | s. | d. |
|---|---|---|---|
| To Balance at Bankers, April, 1880 ... ... | 330 | 0 | 5 |
| Examination Fees to March 31st, 1880 ... ... | 1349 | 5 | 0 |
| Highland and Agricultural Society's Certificate Fees | 212 | 3 | 6 |
| Fellowship Fees ... ... | 78 | 15 | 0 |
| Dividends ... ... ... | 27 | 19 | 8 |
| Copies of Register ... | 3 | 7 | 6 |
| Registrar's Fees ... ... | 0 | 3 | 0 |
| Property Tax ... ... | 2 | 1 | 8 |
| Gas consumed by C.V.M. Soc. ... ... ... | 1 | 17 | 6 |
| Interest from Scottish Bank | 0 | 2 | 9 |
| | £2005 | 16 | 0 |

| *Cr.* | £ | s. | d. |
|---|---|---|---|
| Examiners' Fees and Expenses ... ... ... | 654 | 7 | 6 |
| Examiners' Fees for Fellowship Degree ... ... | 15 | 15 | 0 |
| Rent... ... ... ... | 100 | 0 | 0 |
| Rates and Taxes ... ... | 38 | 1 | 8 |
| Salary to Secretary... ... | 150 | 0 | 0 |
| Insurances ... ... ... | 1 | 18 | 9 |
| Printing ... ... ... | 17 | 3 | 6 |
| Advertisements ... ... | 18 | 3 | 0 |
| Stationery, Postage Stamps, and Bookbinding ... | 28 | 18 | 0 |
| Law and Parliamentary Expenses for Supplemental Charter ... ... ... | 161 | 1 | 11 |
| Reporters ... ... ... | 11 | 11 | 0 |
| Diplomas, Printing and Embossing ... ... ... | 14 | 19 | 9 |
| House Surveyor ... ... | 3 | 3 | 0 |
| Drugs for Cabinet and Museum ... ... ... | 2 | 1 | 0 |
| Coals, Gas, and Wood ... | 12 | 1 | 1 |
| House Repairs, Painting, and Rebuilding Back Premises ... ... ... | 153 | 12 | 6 |
| Furniture, Upholsterer, and Gasfitter ... ... ... | 11 | 8 | 1 |
| Petty House and Sundry Expenses ... ... ... | 30 | 3 | 7 |
| Wages ... ... ... | 20 | 0 | 0 |
| Messenger ... ... ... | 7 | 15 | 0 |
| Banker's Commission ... | 0 | 9 | 3 |
| Balance at Bankers, April, 1880 ... ... ... | 553 | 2 | 5 |
| | £2005 | 16 | 0 |

Amount of Stock standing in the names of the Trustees, £952 13s. 8d. Three per cent. Consols.

We, the undersigned, have examined the above accounts, and have found them correct.

GEORGE A. BANHAM, TOM G. BATT, } *Auditors.*

*April 14th*, 1880.

On the motion of Mr. P. TAYLOR, seconded by Mr. GREAVES, it was agreed that the report be received.

It was also agreed, on the motion of Mr. MORGAN, seconded by Mr. CARTWRIGHT, to adopt the report.

At the request of Mr. WHITTLE, the number of meetings of the Council and Committee which he had attended was corrected in the report, the number being six instead of five. He expressed his opinion that a proper register should be kept, so that there might be no mistake.

Mr. MORGAN explained that the error had been made inadvertently, but said that if such a record was to be kept it ought to be correct. He thought that the number of summonses to attend ought to be given as well as the number of meetings.

Mr. TAYLOR said he thought it was of importance that there should be an accurate register kept, because it was seen from that how the various members fulfilled their duty.

Professor WALLEY said that there were one or two things in the report to which he wished to refer, and one of these had reference to the time when the voting papers were sent out. He found that, in some instances, the voting papers did not arrive at their destination in time for the members to vote. For instance, he had received from Aberdeenshire a letter dated the 24th of April, in which it was said that the voting paper was received only the previous day at three o'clock. Now they were all aware that in country districts a letter very frequently could not be answered by return of post; and it so happened that, in this instance, a letter received at three o'clock could not be answered the same evening; in fact, it could not be answered till the Monday. His own voting paper arrived in Edinburgh on the 22nd, which gave him ample time to return it by the 25th. He did not quite understand whether the bye-law on the subject meant that the voting papers were to be at their destination three days from the date, or despatched from London three days within the date. If the latter was the meaning of it, then his voting paper did not reach him in time. He thought that, so far as it could be done, ample time should be given to outlying members to send their voting papers back in time, especially in the case of the members in Aberdeenshire. There was another matter to which he would refer, namely, as to those who had passed the examination last year. On page 3 of the report there were a number of names given of students having obtained honourable mention. Now, so far as he observed, there was not the name of a single student from Scotland who had obtained honourable mention. He did not know the reason of that, but it was a matter that should be inquired into. Those that were given were all from the London College. He wished to make another remark, and that was in connection with the statement in the report, "that steps should now be immediately taken by the Royal College of Veterinary Surgeons to obtain an Act of Parliament for the protection of the title of Veterinary Surgeon." At the last Council meeting he made the remark that he thought this matter should be brought prominently before the members of the profession, and he did not think that he was out of place in directing particular attention to that matter, so that they might discuss it amongst themselves, and when the time came they might help them in the matter.

The PRESIDENT asked if there were any further observations to be made on the report.

Mr. HUNTING, London, said he wished simply to remark that this their first meeting in the Scottish capital marked a new era in the life of the profession, and the successful result of a long struggle to improve the position of the profession (applause). He thought that they might congratulate themselves on having arrived at the stage of having obtained such a good position that they could meet in Scotland without opposition from another examining body. At the same time a healthy rivalry was not a thing to be objected to, and he had just risen for the purpose of stating that there was a chance of making a mistake in the other direction, and getting into a dead level of uniformity. Although one examining body was a good thing, yet it was not a good thing that they should have merely one governing body. He should be very sorry to see the schools ruled entirely by the profession, and that was what he was afraid they were approaching to. He thought that the schools and the management of the schools could not be too much separated from the profession so long as the College had the power of granting diplomas. Of course there was no reason why the schools should not combine voluntarily, and select parties to examine ; but it would be a mistake for the schools to hand it over entirely to the profession. It was the thin end of the wedge, and they might possibly be interfering with the schools afterwards in other matters. He would say, let the schools submit their students to whatever matriculation examination they might choose, and if they did not get proper men to do so, they would soon be shown in their true colours, and free trade wou'd very soon right itself in the matter. With regard to the Museum of the College, he thought that any person who had been in it would be of opinion that it was simply and solely a disgrace to the profession. There were many really valuable specimens hidden away in a manner that was not creditable to them. There was hardly a provincial town that did not have specimens worthy of the Hunterian Museum, and he believed that the veterinary surgeons throughout the country would be willing to send up specimens to the Museum of the College provided there was a decent place to put them in. He must say that he felt almost sorry to read that somebody had presented the skeleton of a pure Arab horse, as he did not know where it was to be placed. He concluded by saying that he thought they might congratulate themselves on everything having gone right lately and also on their present meeting in Edinburgh (applause).

In reply to Professor MCFAYDEAN, Edinburgh,

Major-General Sir F. FITZWYGRAM explained that there was an error in the report with regard to the regulations as to the Fitzwygram Prizes, but that the papers sent out in his name were correctly worded, so that he did not think any practical injustice had been done to any one.

Mr. DOLLAR, London, said that several members had received no voting papers. He believed there had been some difficulty in issuing the voting papers this year—first, on account of the members not notifying to the Registrar the alteration in their addresses, the greater number of fresh names appearing on the Register for the first time. He did not stand up to find fault with what had been done ; still he thought that making a note of the delay that had occurred this year would have the effect of the papers being sent out better next year. He wished to take the opportunity of moving a resolution, and he would do so in connection with the Annual Report. The Report stated that "steps should now be immediately taken by the Royal College of Veterinary Surgeons to obtain an Act of Parliament for the protection of the title of Veterinary Surgeon." He merely made that paragraph the stepping-stone to bring forward what he wanted. The resolution he was to propose, if it was acted upon by the Council, would not only have

a great influence on the profession itself, but also in connection with the view that the public would take of them as a profession. If they went to Parliament for a Penal Act, there were some members who would ask, "Who wants a Penal Act? Are they more respectable than the individuals whom they are asking the Act against?" When he read Clause No. 12 of the Supplementary Chapter of the Regulations in connection with the Charter, he was surprised at the unlimited power which the Council possessed over every one of its members. But in reading further on in the Charter there was no line laid down in any shape or way. They were, as it were, a body of men placed body and soul in the hands of the Council (a laugh). He did not object to that; he was satisfied that they should hold that unlimited power, but he was anxious to know, as an individual member of the profession, in what way they were ready to exercise that unlimited power. He had no doubt that if it was exercised it would be exercised for the benefit of the profession, but the clauses in connection with the matter were in such a crude state that no one knew how the Council might act for the benefit of the profession. In making these remarks he referred to the getting of a Penal Act for the profession. Now, the very first thing that would be said in the House of Commons, if they went as a body, would be—How do they regulate the conduct of their members? There was nothing printed to show what these regulations were; and although they could point to the clause showing that the Council had unlimited power to expel any member from the profession for a sufficient cause, there was no provision stating how the Council should act in this matter. What he wished to propose in the shape of a resolution was the following:—"That the profession, represented by the members now present at their annual meeting, consider that the time has arrived when the Council should embody in a series of resolutions what derelictions of conduct on the part of any of their members will subject them to the cognisance of the Council, with a view to putting Clause 12 in operation against them." In his opinion, if that were done, it would not only be a most beneficial thing for every member of the profession as a profession, but it would have a great tendency to raise every member of the profession if it was known that the Council in connection with it had such unlimited powers, and that they would exercise them in certain circumstances. He would be glad if any gentleman would be good enough to second the resolution, and make any remarks regarding it, and he would also be glad to answer any questions in connection with it.

Mr. LAWSON, Manchester, said he had great pleasure in seconding Mr. Dollar's proposition, and he entirely concurred in all that he had said. There was another matter that he wished to bring before the Council, and he was enabled the better to do so as he had experienced that morning the labour in connection with it, namely, as to the voting papers. He would suggest to the Council respectfully that they should see that next year the voting papers were sent out in a manner similar to the voting papers in a Parliamentary election. The names were in larger print, and those who voted put a cross against them, so that the scrutineers had little or no difficulty, while the voters would also have less difficulty in marking those gentlemen for whom they voted. There was considerable difficulty experienced at present, and there were a great many bad voting papers. He might say that he had had applications from a number of people asking how they were to vote. He had no doubt that it would be for the general welfare of the profession if this matter were taken into consideration.

Mr. MACKINTOSH asked if Mr. Lawson proposed that in future they should vote by ballot?

Mr. LAWSON said that the voting was by ballot now; but he wished the system to be entirely altered and reorganised. At present it was very easy

for a man to put a cross at the name after the one he intended to put it, and often they could not tell for whom the vote was given.

Mr. TAYLOR.—You would still have each member to sign his paper with his name?

Mr. LAWSON.—Decidedly.

Mr. TAYLOR.—And that the type should be larger?

Mr. LAWSON.—Yes ; and that the way they voted for a Parliamentary candidate should be followed in the voting paper. It was plainer and more legible than the present system.

Mr. GREAVES, Manchester, said he saw the force of Mr. Lawson's remarks, but no system that could be adopted was perfect. The voting papers sent out in the election of Members of Parliament were open to the same objection as had been urged (cries of "No, no"). There were many cases where the cross was put between two names, and you could not tell which party the cross was intended for. He thought he must be a very stupid man who could not understand the directions given on the voting paper : but so it was, and there would continue to be mistakes. With reference to one of the subjects brought before them, the sending out of the voting papers, he had to complain that they had not been sent out in that due form that they ought to have been. He had a friend who had resided at the same place for forty years and he did not get his voting paper till the 27th, while it ought to have been returned on the 25th. Other members did not get theirs till the 27th. He hoped the same thing would not occur at the next Annual Meeting. With reference to Mr. Dollar's resolution, the question was discussed at the Council as to what should be the nature of the offence of the person who should be excluded from the profession, and he might tell them that it occupied a good deal of time. The various points were fairly discussed, and it was thought best to leave it as it now stood in the rules. They might depend upon it that it must be a heinous charge against a veterinary surgeon that would exclude him from the profession. The Council had guarded against it, if it were to be carried out unfairly. They must have two-thirds of the members present before any action was taken, and then three-fourths of those present must be in favour of any action being taken before it could be done ; so that it must come before a full Board before action could be taken, and the Council was not a body that would exclude a man if there was not sufficient reason for doing so. Perhaps there might be two or three cases in a man's lifetime, where a person had proved himself to be a disgrace to his profession. It was right that they should have power to exclude men from the profession who were unworthy of it (applause). There was one other subject to which he would refer, and which had been alluded to by Professor Walley—namely, the Matriculation Examination. He did not take the same view of the matter that the professor did. He thought it was right that the Council should have the power to examine or give the subjects for examination before a student entered the College schools. He had seen some instances of an absurd anomaly, where a student had been examined at one college and rejected. His education had been very limited, and he passed to some other College, where he was admitted. Now, if the Council had the power of appointing the examiners, such an incongruity as that could not occur. They were getting such a position that they ought to improve themselves, if possible, and let them get better educated men into the profession. The time was when any man, let his education be ever so limited, was allowed to enter the colleges if he paid his fee. He remembered on one occasion, when he had an opportunity of coming to Edinburgh on a deputation from the Royal College of Veterinary Surgeons, that he found the Lord Provost and members of the Corporation were in favour of a higher standard of education than the Colleges were then asking for. He thought that

the time had come for the student having a good position in regard to education before entering the College schools. He was in favour of the various schools placing the power in the hands of the Council of appointing the examination of the student before he entered the College. He hoped that an amicable arrangement would be come to by the principals of each college to give the power into the hands of the Council.

Professor McCALL, Glasgow, said that as he was the principal of a college that objected to the system of uniformity being carried out, he thought it was right that he should make a statement. He was the first to introduce an educational test before allowing a student to enter the College, and he was in a position to say that no student had been allowed to enter the College who had been refused by some other College, so that the statement that had been made to that effect did not apply to him. He respected the Council, and he believed that the very best talent that had been found in the profession had been found in it. Hitherto they had conducted the duties devolving on them with great efficiency, but he was not prepared to hand over the power he possessed, so far as an educational test was concerned, to the Council. He believed that if the Council adopted the same measures with regard to the Scottish schools as to the schools in London, they would empty the benches considerably. He was perfectly willing to come to an understanding with all the three colleges, whereby the principals of all the colleges should have an equal representation as to the changes that took place in the Council. He knew that his feelings in regard to the matter were sympathised in by Principal Williams and Principal Walley. Before he wrote the letter on the subject he consulted those gentlemen, and they also came to the conclusion that the principals of the colleges should have a seat at the Board. He was perfectly willing to come to an understanding with the College to have a uniform test applied to all students entering the College, but he would not hand over to the Royal College the power he possessed (applause).

Mr. MACINTOSH.—Is this before the meeting as a motion, or as an expression of opinion?

The PRESIDENT.—It is simply an expression of opinion.

Principal WALLEY said that Mr. Greaves referred to the fact that a student was received at one college after being refused admission to another. Now, such a fact had never come under his knowledge, and as far as the school with which he was connected was concerned, he was certain that no such admission had ever been made. He rather thought that Mr. Greaves had mistaken the matter a little. This was what had taken place. A student had been refused admission to the London School, simply because he could not pass the examination, and at another college he had passed an examination, after which he went back and entered that School. The rule was that the student should not enter the school till he had passed in Latin or French, but it went on to say that a Matriculation Certificate from another school would be accepted. They would not allow students to pass without Latin or French, but they might come to Edinburgh, pass the Matriculation Examination there, and then enter the London School. However, he might state that they put a stop some time ago to anything of the kind being done in the future, so far as Edinburgh was concerned.

Mr. CAMERON, Berwick-on-Tweed, said he had much pleasure in being present at the first meeting of the Royal College in Edinburgh. He was not living in Scotland now, but he had still the same feelings as Scotchmen. He highly approved of the change which had been made which enabled the meeting to be held in Edinburgh; but another change would require to be made before the full advantage could be reaped. It had not been taken into account that there were no trains running in the north of Scotland on Sab-

bath. It was a matter of time and money to those in the north who attended the meeting, and he thought that an arrangement should be made so that meetings such as the present, and even in London, should not take place on a Monday or a Saturday. The present system also involved a good deal of Sabbath travelling. Although he had no special objection to Sabbath travelling which he did professionally, yet it ought to be done as little as possible. They knew the source of England's greatness, and they knew that it was said, "They that honour Me, I will honour." If there was no legal objection to it the meeting ought certainly to be held on any day of the week except Saturday or Monday. He was sure that Scotchmen were highly gratified to see their English brethren in Edinburgh. With regard to the question of voting, he considered it would be a very great improvement if Mr. Lawson's proposal was carried out.

General Sir F. FITZWYGRAM said he wished to make a few remarks. Professor McCall, in the course of his speech, said that the Royal College of Veterinary Surgeons were regulating or had regulated the Matriculation Examinations. That was not the case. The Royal Veterinary College had regulated its own examinations, and the Royal College of Veterinary Surgeons had had nothing to do with it. Professor Walley had mentioned that while the Royal College of London prescribed a high standard, they allowed the admission of students surreptitiously by coming down to Scotland. Now, there was no doubt that in the original scheme in London they did accept certain examinations for certain places, but it was found that there was an abuse, and the Governors stopped it, and no one was now allowed to enter the College unless he passed the full examination. The proposal of the College was not to establish a uniform examination for the four schools, but to define a certain standard below which no one should be allowed to enter into the veterinary schools at all. What they endeavoured to do was to draw out a scheme giving the lowest examination which a young gentleman must pass before he could be fairly supposed to derive any advantage from entering the schools. He thought that if the principals of the four schools would agree together, the Royal College of Veterinary Surgeons would gladly endorse any recommendations they might make. There would then be no chance of the examination being altered without the accord of the schools. He thought that some examination should be adopted, below which no young gentleman should be allowed to enter.

Principal MCCALL said that the alterations had taken place principally with reference to the veterinary element of the London College. As they were aware, Sir F. Fitzwygram, Mr. J. Collins, and Mr. Harpley, were Governors of that Institution. Now, suppose that the other colleges took a part in the Matriculation Examination of the students, these three gentlemen would still have to do with the Matriculation Examination for members of Council; so that, while the other three colleges in Scotland would have no voice at all, these three gentlemen, being Governors of the Royal Veterinary College, would have a voice.

Mr. FLEMING said that this was a very important question, and he thought that the time had arrived when their educational status should be improved. It must be confessed that the standard of education at the present time was very far from what it should be, and the anomalies that existed pointed to the fact that if it was left to the schools themselves there would be no uniformity; because it was impossible, while they had competing schools, to have that uniformity of standard which was so necessary. The medical corporations had a standard of education laid down, which applicants for admission to the schools had to pass before they were admitted. He thought that, as the Royal College of Veterinary Surgeons was responsible for the status of the student, inasmuch as it gave him its diploma, it was

responsible not only for the professional education of the student, but also for his general education. Although some of those present might dissent from what he said in regard to that point, yet he was sure they would agree with him that the general education of the veterinary student greatly required raising. He had had conversations with some of the teachers, and they expressed themselves as labouring under great difficulties, from the simple fact that the men they had to teach were unable to understand the language in which they were taught. It lay with the Council to determine the amount of education that was required for its members ; and now that the profession was entirely responsible for its own position, it should see that its graduates were men who had obtained such a fair share of education as would enable them to study their science, as well as enable them to pursue it with advantage, both to the public and to themselves. In whatever way this might be accomplished, the profession would not be satisfied till this reasonable amount of education was exacted. He thought that the Matriculation Examination should be in the hands of the Royal College of Veterinary Surgeons, because it was the only way they could get that uniformity of education the profession and the public required. As to the voting papers, he thought that the suggestion of Mr. Lawson was a good one. He thought that the cross applied to the name would answer very well, and that it was a mistake that the voter should sign his name. He knew that a certain number of people would not vote because the vote was public, and because the scrutineers could tell how the voter had given his vote. He thought that where there were a number of names to be voted for it was very invidious, and he had abstained from voting himself. He considered it would be a better plan if the names of the gentlemen to be voted for were printed in the manner indicated by Mr. Lawson.

Mr. SPREULL said that they did not require any signature at all.

Principal WALLEY said that, with regard to Matriculation, he believed that the schools were willing to agree amongst themselves as to a certain uniform standard. He thought that that was the best way of solving the difficulty, and that it was merely a matter of time. Although he had no objection to the Council exercising some supervision over them, still he thought they need not put the power entirely out of their hands. As to the system of voting, he did not see that if they were to vote by papers they should affix their signature. Personally he did not care about the matter, and he was ready to put his name all the same, but he thought that the voting should be carried on in the way it had been.

Mr. W. A. TAYLOR said that if he was in order, as the discussion had assumed a somewhat miscellaneous character, he should like to offer a few remarks with regard to the voting papers. Having been unexpectedly called upon to act as one of the scrutineers, he found that much time was unnecessarily expended by the manner in which members of the College had to vote for the respective candidates. It was, he thought, an unnecessary and unwarrantable tax on the time of the scrutineers to have to count and go through in a minute manner the names as at present arranged, in order to arrive at a correct conclusion. He cordially supported the suggestion of Mr. Lawson, more particularly that the names of the candidates be printed in larger type. There had been, he believed, fourteen votes lost that morning, a majority of them from absence of signature, and some others from mystification of the names and residences of the candidates with the list of the present members of Council. Some gentlemen, unable to understand the Queen's English, had erased the names of the present members of Council instead of voting for the candidates. He thought that was another suggestion that might be taken into consideration in future by those who draw up the voting paper. He did not know that it was absolutely necessary that a list

of the present members of Council should appear on it. If so, he thought that it would be highly judicious that a plainer and more distinct manner of discriminating between the two were applied in drawing out the voting papers. He thought also that some better arrangement might be made with regard to the appointment and the attendance of the scrutineers. If gentlemen accepted an office, he thought they were called upon and in duty bound to be there to do their duty. It was exceedingly unpleasant for a member of the profession, after having travelled a distance of between 200 and 300 miles, to be suddenly called upon to act as a scrutineer. He might say that it had been so on this occasion in several instances.

Mr. Dollar's motion was then put to the meeting, and unanimously adopted.

The PRESIDENT then said that he would endeavour to explain some matters which had been under discussion that afternoon. In the first place, as to the non-delivery of voting papers till late in the week, he must confess that he was to some extent to blame in the matter. The annual report was detained in Edinburgh for a day in consequence of his absence from home. It could not be printed till he had revised it after being sent to him by the secretary; and, being from home, the report did not get to London for another day. That would to some extent account for the delay. He trusted, however, to have an opportunity of moving in the Council, or that some one else would do it for him, that more days would be allowed for sending out the voting-papers. He hoped that by next year there would be no longer any cause for complaint. The Secretary told him that the reason why a great many gentlemen had not received voting-papers had been on account of their having changed their residences since the last publication of the Registrar. The voting-papers were sent to the old addresses; and, the new addresses not having been given, the papers were returned. He hoped that every gentleman who had changed his address would send the new one to the Registrar of the College, in order that he might get the voting-paper in due time. With regard to the matriculation question, he must confess that he was quite willing that the Council of the Royal College of Veterinary Surgeons should have at least the power of fixing a minimum examination. That was to say, that, after due consultation, and by arrangement with the principals of the colleges, power be granted to the Royal College of fixing, as it were, the lowest standard below which no one would be allowed to enter the College, and also of appointing examiners to conduct such examinations, leaving it open to each individual college to elevate its standard of education if it thought proper; but at all times, there being a distinct arrangement between the schools and the Royal College of Veterinary Surgeons, that the Royal College of Veterinary Surgeons should not be allowed to exercise their power in raising the standard of education except by the consent of the principals of the schools. If that was carried out it would meet the views of all, and put the matter on a satisfactory footing. He had always had a strong feeling that the power should be in the hands of the profession. He quite agreed with the observation by Mr. Fleming as to the College being not only responsible for the scientific training, but also the educational training of those who became members of the profession; and when the matter came forward again, he would certainly support the views he had expressed at the present time. He would not touch much on the question of students coming from London to Scotland, having been rejected at the college there, and afterwards returning with a certificate. It so happened that he knew the gentleman referred to. He was a good scholar, but did not know French or Latin, and was excluded. However, he was in a position to say the London Veterinary College would not now allow any man to enter with a certificate except it was equal to the standard required by the London Veterinary College; and therefore that little matter, which occured a year or two ago,

could not possibly occur again. He was sorry that at their first meeting in Edinburgh there should not have been a larger muster of Scotch veterinary surgeons. They had for a number of years agitated for what had happened that day. They had desired that the profession should meet in the City of Edinburgh, and after having obtained their desire, he was afraid that they did not appreciate them, or else the attendance would not have been so sparse on the present occasion. Considering that so many of their friends had come from Lancashire, Yorkshire, London, and other parts, he thought that the Scotch veterinary surgeons might have come in greater force. Their friends had come to do honour to veterinary science in Scotland on the present occasion, and he was sorry that many living in neighbouring parts were conspicuous by their absence. As to the point raised by Mr. Cameron, regarding the day of the Annual Meeting of the Royal College, he had to state that it was laid down in the Charter that it was to be held on the First Monday in May. He did not think that the objection as to Sunday travelling would have much weight with veterinary surgeons. He did not, indeed, see why it should, for they often had to travel professionally on that day, and it was just as important that they should travel to the meetings of the College as it was that they should attend a case of sickness on Sunday. He hoped, then, that if this obstacle had stood in anyone's way it would in future be forgotten, and that they would have larger attendances. As to the omission from the report of the names of the gentlemen who passed with credit last year, he might say that the names of the students who passed in April last would not be received in time to be in the report; but then they found that the names of the men who passed with very great credit last year were also omitted. That, he was inclined to think, was due to some omission on the part of the secretary in Scotland, Dr. Dunsmure. He trusted that such an omission would not take place again, as it was a matter of professional and general interest. He would be glad if the Council would support the view that there be a supplementary report published in the *Veterinarian* and VETERINARY JOURNAL, so that people might not run away with the idea that no students passed with credit on this side of the border (applause). As to the Museum, they all knew that the building was not such as they required—that they needed a larger and better building, but they were not so fortunate as to find such a building in London last year. The matter was, however, receiving due consideration, and a committee was appointed to consider the whole matter. There was a room on the second floor, at No. 10, Red Lion Square, that might be applied for the purpose, and he could say that the matter would receive due consideration at the hands of the committee that had been appointed. As to the alteration of the voting papers, he thought that the present voting paper was a very good one, that the directions were exceedingly plain, and that no man of ordinary intelligence should make a mistake in regard to it. But he should like to see the names of the candidates in much larger type, and much more space between the names. He could understand the difficulty of separating the names when they were so close together, and he trusted that next year the names would be printed in much larger type. For his own part, he detested secret voting, and if it came before the Council to discuss the matter, he should certainly go in for open voting. He did not think that any man should refuse to sign what he had voted. He had now to report the result of the election, and he might state that, notwithstanding the complaints about the non-receipt of voting papers, about 900 had been received this year by the scrutineers—a larger number than ever was returned to the scrutineers before, causing much extra work on the part of the secretary. Mr. G. Fleming headed the list with 625 votes; Professor

Brown obtained 609; Professor Pritchard, 593; Principal Williams, 495; Mr. T. Greaves, 458; and Mr. H. T. Batt, 398. Principal Walley was elected by 355 votes in room of the late Mr. Cuthbert. The following were the votes given for the other candidates :—Mr. Talbot, 309; Mr. Flanagan, 299; Mr. Wragg, 297; Mr. Robinson, 282; Mr. Cartwright, 261; Mr. Dray, 197; Mr. Owles, 142; Mr. Moon, 98. The President then intimated that the next Meeting of the Council would be held in London on the 25th of May, 1880.

On the motion of Mr. ROBERTSON, Kelso, a cordial vote of thanks was given to the President, and the proceedings were then brought to a close.

## THE ANNUAL DINNER.

The Annual Dinner was held at the Waterloo Hotel, seventy gentlemen being present, among whom were Mr. Imlack, President of the Royal College of Surgeons, Professor Turner, Drs. Dunsmure, Dycer, Stevenson, Macadam, Majors Kaye and Boulton, Messrs. F. N. Menzies, Munn, etc. Among the toasts perhaps the most notable was that of Professor Turner, Edinburgh University, who, in giving the Royal College of Veterinary Surgeons, said he had been attached to the Royal College for some years in a certain official capacity, which had given him an opportunity of knowing a great deal of what the Royal College had been doing, and of satisfying himself that it had been doing excellent work in connection with the veterinary profession. The Royal College could not boast of that antiquity which some Royal Colleges in the toast list could boast of. It only dated back some forty years; yet they might regard it as a very lusty infant—a child which could assert itself, which possessed all the elements that conduced to vigorous manhood. He knew of few institutions associated with educational matters which had done so much good, from a professional point of view, as the Royal College of Veterinary Surgeons had done. Under its auspices, under the examinations conducted by it for a series of years, there could be no question that the tone and standard and spirit of the veterinary profession had amazingly improved (applause). And he was happy to say that the College was not disposed to stand still, but was desirous of furthering the prosperity of the profession over which it exercised so important a superintendence. During the years he had been engaged as one of the examining body, a most important improvement had been instituted, namely, the lengthening of the curriculum. Nothing, he thought, that the College had yet done had been more conducive of good than the addition of one year to the curriculum. He had had an opportunity of comparing the acquirements of the candidates before this extension, and he could assure the members of the College present that the change had been of a most beneficial character. The candidates were now prepared to answer questions, and to display an acquaintance with their various important departments of professional knowledge which, prior to the extension referred to, it would have been simply absurd on the part of an examiner to have expected. The young men now in course of preparation for examination in its successive stages were unquestionably more thoroughly prepared than was the case formerly. But if he might be allowed at the meeting of so many influential members of the College to make a statement with reference to veterinary education and examination, he should like to say that he thought the College ought to make an additional step forward, and that before long. The step should not be in the direction of extending the professional curriculum from three to four years—not at least now, for he did not think the profession ripe for that; and the addition of another year of study added to expense of study, consequently many who would be disposed to enter the profession might not have the funds to do so. The step he urged, and which he hoped would

be seriously considered, was the institution of an entrance examination. Nothing, he thought, would add so much to the standard of attainments in the veterinary profession as the institution of such an examination ; and no one should be allowed to appear for professional examination until he had passed that entrance examination. As an examiner, he had constantly felt difficulty with candidates who came up absolutely ignorant of the Latin language, on which was based so many of the terms employed in veterinary medicine, and the sciences of which veterinary medicine was founded. He would have an entrance examination embracing not only Latin, but English, and the more ordinary arts of education. This, he maintained, would increase the whole standard of the profession.

### Meeting of Council, held May 25th.

Present—Messrs. Anderton, Batt, Blakeway, Cartledge, Coates, Collins, Sir F. Fitzwygram ; Messrs. Fleming, Freeman, Greaves, Harpley, Reynolds, Robertson, Taylor, and Whittle.

On the motion of Mr. Greaves, seconded by Mr. P. Taylor, General Sir F. Fitzwygram was voted to the chair.

The Secretary read the notice convening the meeting.

The minutes of the last Special Meeting were read and confirmed.

The Secretary stated that letters had been received from Professors Williams and Simonds, and Messrs. Morgan and Gowing, regretting their inability to attend the meeting. Prof. Williams, in his letter, expressed his best thanks to the Council for the honour they had conferred upon him in electing him President for the past year, and for the kind support and assistance afforded him in carrying through the business.

Mr. P. Taylor proposed Mr. George Fleming as President for the ensuing year. He did so on the ground that Mr. Fleming had been a member of Council for twelve years, and had performed his duties in a faithful, honest, and Englishman-like manner. His transcendant abilities would enable him to fulfil the office with credit to himself, and he would be an honour to the Council.

Mr. Greaves said he had great pleasure in seconding the proposition.

Mr. Fleming was unanimously elected.

Gen. Sir F. Fitzwygram said he wished not only to congratulate Mr. Fleming, but also to congratulate the Council on the selection they had made. Sir Frederick then vacated the chair in favour of Mr. Fleming.

The President thanked the members of the Council most heartily for the honour they had paid him in electing him as President of the Royal College of Veterinary Surgeons. He must confess that he accepted office with a large amount of diffidence. He was not sure whether the very high compliment they had paid him was altogether deserved. He himself was of opinion that the office of President should be held by the senior members of the profession. There were many worthy men whom he should have liked to see President in preference to himself ; nevertheless he obeyed the call of the Council, and he trusted that in the coming year they should be able to transact the business of the College satisfactorily. He should rely upon their assistance. There was a great arrear of business, and a large amount of committee work especially. He trusted the members of the Council would give him their active support, and he assured them he would do all he could to further the interests of the Royal College.

The following gentlemen were nominated as Vice-Presidents :—Messrs. Dray, G. Williams, W. Woods, Moon, Dollar, F. Dunn, Cartwright, Prof. McCall, and Mr. Cox.

On the ballot being taken, the following was found to be the result :—

| | | |
|---|---|---|
| Mr. Dray | ... ... ... ... | 11 Votes. |
| „ Cartwright | ... ... ... | 11 „ |
| „ Cox | ... ... ... ... | 9 „ |
| „ Dunn | ... ... ... ... | 9 „ |
| „ Woods | ... ... ... ... | 8 „ |
| „ Dollar | ... ... ... ... | 8 „ |
| „ Moon | ... ... ... ... | 7 „ |
| „ G. Williams | ... ... ... | 6 „ |
| Professor McCall | ... ... ... | 6 „ |

Messrs. Dray, Cartwright, Cox, Dunn, Woods, and Dollar, were therefore declared duly elected.

On the motion of Mr. TAYLOR, seconded by Mr. WHITTLE, Mr. Dray was unanimously re-elected Treasurer.

Mr. A. W. Hill was unanimously re-elected to the offices of Secretary and Registrar.

This concluded the business of the First Special Meeting. A Second Special Meeting was announced to be held, but

The PRESIDENT questioned whether it could be held legally, as the Vice-Presidents for the past year no longer existed, and those who had been just elected were not present. The Vice-Presidents were responsible for their share of the business of the Council, and if they had not received notice of the meeting they could not be held responsible.

Mr. GREAVES thought it had been hitherto held that the Council was not complete unless the Vice-Presidents were in attendance.

The meeting, therefore, was not held, and the business that would have been transacted was postponed till the next meeting.

Before the Council dispersed, on the representation of Mr. COATES, it was agreed that the Treasurer should be instructed to reimburse the Secretary for the expenses he had incurred in connection with the Annual Meeting at Edinburgh.

The Council then adjourned.

## CENTRAL VETERINARY MEDICAL SOCIETY.

AT a meeting of the above Society, held at No. 10, Red Lion Square, on Thursday evening, February 5th, the President, Mr. H. J. Batt, in the chair, the Secretary introduced a specimen of a ruptured liver, taken from a seven-months'-old filly, which had been sent by Mr. M. Tailby, of Birmingham. There was a large quantity of blood in the abdomen. The filly was a quiet animal, and had belonged to a butcher, and was eating shortly before death ; it had been forwarded eleven days previously.

The CHAIRMAN thought the symptoms the result of a blow. He remembered a two-year-old horse falling very suddenly with a full stomach, and thus rupturing its liver ; had also been called in to see a colt that had, when galloping, slipped up on its side and ruptured its liver ; it lived three or four days after.

Mr. FURNIVALL had had a colt three years since just the same way ; it died the same day.

The CHAIRMAN then called upon Mr. Furnivall to give his essay on "Inoculation in Contagious Diseases as a Means of Prevention and Cure" —viz., Pleuro-pneumonia, Glanders, and Farcy, who said, on the subject of Cattle Plague, that on the 23rd of April, 1868, there was a large herd of black Welsh cattle passed through Kingston to be sold at the fair. When his men were going to work, between the hours of five and six a.m., they

heard a lot of shouting and the rattling of cows' horns in their place, and of course going to see what was amiss, found 350 cattle mixed with their own (they kept 200 fine milch cows, valued at £25 each). They lent assistance and soon separated them. The cattle were started back the next day, and reached Barnet fair. The following day intelligence came that these cattle were affected with the Plague. Professor Simonds, of the Privy Council, went down, and the herd were destroyed, and the poor Welshmen had to go to the Hammersmith magistrates in court to ask for money to take them back home. Fourteen days afterwards, he (Mr. Furnivall) found his cattle began to droop. He communicated at once with the inspector, Mr. Evershed, of Guildford, who gave notice to the Privy Council. Professor Simonds came down the following day, and the whole of his ninety-seven head had to be shot. The question comes, Was there a cure for this? He had a pedigree bull—bought it at Mr. Dean's sale, giving 250 guineas for it; it got a slight touch, but not caring to destroy him, consulted a Scotchman, his bailiff, who suggested a good idea—to take a straw rick, cut it through, make a loose box, with up and down shaft. This advice was acted upon and the bull inoculated. The treatment pursued was diniodide of copper, with sulphate of iron and cantharides. It was allowed the most generous diet obtainable. He kept it sixteen weeks; it gradually picked up in condition, and he had the animal still, showing, he thought, that by inoculation Cattle Plague was curable. Here there were all the symptoms—defluxion of the nose, stinking breath, the swollen tongue and gums, and the horrid effluvia of the breath. Knew of no analogous case recorded in the veterinary books, with the exception of one cured in the year 1842, which was recorded in Percivall's "Hippopathology," vol. iii., page 186, and also inserted in the *Veterinarian*, of 1842, by Mr. Ernes—"He was called to a case on the 6th of October. Found swellings of the hind legs, and enlargement of the parotid glands, with copious discharge from the nostrils," etc., etc.

Mr. MARTIN asked, What was the bull inoculated from?

Mr. FURNIVALL: From one of the diseased cows directly they were slaughtered. The question has been asked by our Continental brethren as to whether anything can be done for it, and he thought his was a *bonâ-fide* case. In *Pleuro-pneumonia* in cattle, he believed that by inoculation not only could it be cured, but prevented. This last year—1879—he personally inoculated 1,500 head of cattle—some affected with it, some not—and had not lost one per cent. For *Farcy* in horses, had tried that by inoculation. In seven cases inoculated, could truly say he had succeeded in curing them, afterwards selling them at Aldridge's. He gave four guineas each for them, and they realised £30 each. He proposed to spend some £500 to obtain diseased horses, so satisfied was he with inoculation, if Parliament would sanction it, and instanced the public recognition of Mr. Rutherford's services, for inoculating a couple of thousand cows in Edinburgh, by the testimonial received in 1879.

Mr. H. J. HANCOCK asked, with reference to the bull, if there was any suspicion the animal was affected with Cattle Plague at the time of inoculation, also what virus was selected. He did not think one isolated case was any proof inoculation would be a preventive or palliative to Cattle Plague. In his father's time many animals were treated, and several recovered and lived for some years, and no inoculation was practised. Were the horses suffering from Farcy at the time, also what did Mr. Furnivall inoculate them from?

Mr. FURNIVALL, in reply, was satisfied this bull had the Cattle Plague on him, but in a mild form. The virus was a portion of the lung he took from the diseased cows, and, selecting between the third and fourth coccygeal bone, made an incision in either side of the tail and put a piece in and bound it

round the tail of the bull. With reference to the animals suffering from Farcy, when bought they had got from twenty to thirty Farcy buds on them; he slaughtered one on purpose to inoculate the other; he took out a fair portion of the flesh with the bud in, and inserted it in the incision of the third or fourth bone of the tail of the horse he had.

Mr. G. BANHAM observed that he had heard and read of cases recovering, and believed a certain percentage did so recover. This bull was slightly affected, and perhaps would remain so, independently of the inoculation. He thought they could not rely upon one single instance and consider this treatment a cure for Cattle Plague. As regards Pleuro-pneumonia, he believed they were satisfied there was some benefit derivable from inoculation, but they knew it did not produce the same disease. In Farcy, Cattle Plague, and Glanders it produced the same disease, which was fatal. It appeared to him rather risky to inoculate horses with a poison for the purpose of preventing the ill effects of the same poison. Applied to Farcy, he could not understand the theory as to how the inoculation acted, nor could he conceive how a poison taken from one part and introduced into some other part could cure the disease. The report quoted from Percivall's "Hippopathology," he supposed was considered in those days the best book written, but still they could not rely upon everything that was down in black and white in the present day. He had seen very bad cases of Glanders, but had never seen or previously heard of Typhoid Glanders, but thought it more likely an anthracoid affection, and that Charbon had also been detailed as the same affection.

Mr. J. MOORE observed Purpura Hæmorrhagica had been mistaken for it, that Purpura looked like Glanders at one of its stages, and that if a man had not seen many cases he might make a mistake.

The SECRETARY asked Mr. Furnivall what class of horses the affected animals were; their condition and age at time of sale; also, if lost sight of since their sale, could he take measures to ascertain where they went; if the whole or half the lungs were affected, and whether he would deal with Glanders in the same manner, by inoculation and treatment. He thought if the preventive measure was to become amenable to treatment it would be beneficial to the public.

Mr. SHAW asked how many days elapsed before they showed symptoms of Farcy after inoculation?

In reply, he was informed he had not tried Glanders, because there was no Act of Parliament permitting him to do so.

Mr. SHAW had seen a great number of affected beasts, having to give orders for horses to be destroyed: among farriers it was called the "Black Fass."

Mr. HANCOCK observed there had been a case at Poplar, where the whole of the herd were destroyed, save one cow, which was allowed to remain there for eighteen months; throughout there was nothing the matter with her; she was vaccinated; he got an order this cow should remain. Went to a shed in London, and found three there. The man had fourteen affected with lung disease—two were, no doubt, largely affected with Cattle Plague; he thought the others were the same: the two were killed, the other, not affected, remained alive.

Mr. BANHAM said he could corroborate Mr. Hancock's statement. Professor Simonds had narrated a case of a cow which was inoculated, and stood with Plague-affected animals, and calved in the time.

Mr. J. MOORE, sen., saw one at the knacker's, that had to be killed; it was bad with the Plague: she was put among the dead carcases and was found going about recovering from her disease. He had seen scores getting better with Cattle Plague in a mild form, exhibiting all the symptoms, yet they got

perfectly well. He believed Professor Simonds had said it was something similar to Cattle Plague, and not "it"—that was one way of getting out of the difficulty.

The CHAIRMAN remarked, Mr. Furnivall had given a large field for discussion. As far as Cattle Plague was concerned, there was but a very small percentage that did recover. At the time of the first Cattle Plague in London, in the Edgware Road there were 150 head of cattle with the disease, and three or four that had not the disease were placed with them, and two had it and recovered. With reference to inoculation, he had known it to have been tried upon the Continent, in Germany especially, and in Russia. Some years ago Professor Simonds and Mr. Ernes were employed by Government to investigate Cattle Plague. They went over Hungary, Austria, and parts of Prussia, and came to the conclusion that the *only* plan to adopt was to stamp it out; this was also his opinion. He could not conceive that in the diseases of Glanders and Farcy, inoculation would be of any service, still it was a matter worth investigation. The isolated case Mr. Furnivall had given them of the young bull, was insufficient to rely upon. It did appear some good had been done with Pleuro-pneumonia, but he failed to see how, in regard to the other diseases, the introduction of the same disease as a cure could restore the animal to health.

Mr. MARTIN thought it a very important subject. He believed it would be difficult to induce the public to allow them to inoculate from cattle with Pleuro-pneumonia, to introduce it into their stock. Mr. Fleming had written a great deal in the "Journal" about the success in Scotland. He would like to know more of Mr. Furnivall's treatment in the cases of Pleuro-pneumonia—whether the virus was taken from the lungs, and what the symptoms exhibited were?

Mr. MOORE had been in very many cowsheds in London, especially in the parish of Marylebone, and found nearly all keepers had their cows inoculated; they could not make a living unless they did so. Most men who kept 100 cows did them all, and he had seen them in all stages of inoculation—the day of operation, and months afterwards: the loss was something like one per cent. The symptoms begin to exhibit themselves after they have been in from a week to twenty-one days; there is a swelling of the tail where the inoculation takes place, where it ought to be swollen—round the fundament, which closes the passage; this swelling has a strong resemblance to lung disease. There are about 700 or 800 dairymen in London, and with few exceptions, they all inoculate; some do not like to, it takes the milk off for a time. It was easy to understand how the disease broke out among a lot of cattle when two or three were affected—viz., by inhaling the breath of a diseased cow; and if several become affected all the others are saved, unless, perhaps, one or two die from the effects—it will run through them all, or nearly all. The prize beast taken to Argyllshire from England, in 1871, took the disease with him, and a number of animals had in consequence to be destroyed. One man threatened him if he went into his barn. The veterinary surgeon there was a brother-in-law of a farmer at Hendon. They inoculated 1,800 in Campbelltown, and since then there has not been a single case of Pleuro-pneumonia in it. If this can be done in a place where there is so much to hinder it, why cannot it be done in London? Mr. Rutherford, who is an elderly man, induced the cowkeepers of Edinburgh to adopt inoculation. Mr. Gamgee attempted to do it many years ago, and failed signally. Since last year there has been no case of Pleuro-pneumonia in the neighbourhood. He contended if there was an Act of Parliament, similar to the Vaccination Act, to have them inoculated, instead of knocking them on the head with a piece of cold steel, it would be a great saving to the cattle proprietor, who only got three-fourths the value of the cow. Two or

three years since he saw some twenty or thirty members of Parliament on the subject, and he was astonished to find scarcely any of them knew or had ever heard of inocutation for Pleuro-pneumonia. Sir Patrick O'Brien put it forward, and his answer was—"There was not sufficient evidence to induce the Government to bring in a Bill." He had nothing to say on inoculation for Farcy. Inoculation was just the same as vaccination. These cattle were affected before. If a child had Small-pox, vaccination will not stop it; so it is with Pleuro-pneumonia—if a cow has it, it will go on. There were five cattle at the same farm affected with Pleuro-pneumonia, as well as the rest; he treated them medicinally, and every one recovered. A week after another took it; he treated that and it got better: as far as his experience went, it was curable. He would not deny that other cows might take the disease any more than a child would take a disease after vaccination, but it was more effectual in cattle than in human beings. He treated them with phosphorus, bryonia, Liq. Ammonia Fort., and extreme cases with sulphate of zinc, according to the symptoms. He cured many cases of Cattle Plague medicinally.

Mr. SHAW questioned whether cowkeepers noticed it until the last minute, when the animal was nearly dead.

Mr. MOORE had been at a cowshed, and seen them take it, with a shivering fit.

Mr. SHAW said he agreed with Mr. Moore there, but how long was it before the cowkeeper gave notice of it? Until the pleura became affected they knew nothing of it, and it was only when the cow no longer gave milk that they said anything about it.

Mr. MOORE said there was no such thing as Pleuro-pneumonia, it was Broncho-pneumonia, it was not Pleurisy—he had seen hundreds of cases, and was certain he had cured several cases, such as mentioned; had been told by farmers over and over again that they cured every cow according to his instructions; a gentleman in Australia had sold five hundred of his pamphlets, this gentleman also told him the farmers cured every case by adopting his (Mr. Moore's) treatment. He could mention the names of some who had cured cases when taken in time to give opportunity. He went to Blenheim Palace, where there were some affected animals, some badly, exhibiting all the usual symptoms. He had a temporary shed put up for them, and placed them under treatment. Some time after he was asked if he recollected going to the castle? He said, "Yes." He found they had lost one lung but were nice fat beasts. He asked what saved these? They were dying before he went down and put them under treatment.

Mr. J. B. MARTIN thought they had the opportunity of treating contagious cases as matters were at present; it was left entirely in their hands, they need not say if it were Pleuro-pneumonia, or what it was, and if they could cure such cases it would raise their reputation in the eyes of the public. He would suggest the discussion be adjourned to the next meeting, when Mr. J. Moore could bring in a paper and give them the benefit of his treatment, as, if that gentleman had the power to cure these cases, it was a matter of the greatest importance to the profession at large, as at present they were ridiculed by the public for having to slaughter the animals instead of curing them. If they said the animal was affected with Pleuro-pneumonia, it had to be slaughtered; they might say it was a suspicious case, or something else; they had the advantage of being able to treat them in any way they chose; and if Mr. J. Moore was so successful in treating it, they might have his treatment in detail. He wished to know whether, in any of the cases cured, the lung had been hepatised afterwards? Twelve months ago there was a case of Pleuro-pneumonia which recovered, and was in the lodge now, he did not think it could spread the disease. He did not believe in any treatment in curing Pleuro-pneumonia when once established.

Mr. PRICE said, in tackling Cattle Plague by inoculation, he thought Mr. Furnivall should have come there prepared to give a better proof of the efficacy of inoculation for Cattle Plague; he did not regard the one isolated case of *supposed* recovery as at all conclusive. In Pleuro-pneumonia he thought a good deal might be done by inoculation, because nineteen cow-keepers in London, at the present time, had their cows inoculated with Pleuro-pneumonia virus. With regard to the inoculation of Farcy, he would ask Mr. Furnivall what kind of animals those were he inoculated from, and what in the world was the use of inoculating an animal with a disease that was in the system? whether he gave them any medicine, and how long the horses were under treatment? It was marvellous for any one to say he could cure Farcy, and give them no practical proof of it; and it was very questionable policy indeed for any member of the profession to come there and say he could cure Pleuro-pneumonia, Cattle Plague, or Glanders.

Mr. FURNIVALL said he did not include Glanders.

Mr. PRICE thought Farcy even more contagious than Glanders; he believed it did more harm in London at the present moment.

The SECRETARY said the question before them was as to the efficacy or not of inoculation for certain affections—Glanders, Farcy, and Pleuro-pneumonia. In Distemper in the dog, the inoculation with another virus (in other words, vaccination) was held to afford the animal an immunity from Distemper; numbers of people believed in it. For years he would not vaccinate, but at length, on account of the fee and multiplicity of applications, he thought he would give it the best test he could. On one occasion he went a long journey to vaccinate twenty-five dogs; he chose the nape of the neck. He wrote to the owner some time afterwards to know how they were (in the meantime he had vaccinated some more for him). The reply he received was to the effect that the whole of the twenty-five dogs he vaccinated were all well; of the last three, two had had the disease—one severely—and died. He asked himself the question—what caused that? Had he operated properly upon these three, or was the lymph different? He thought not.

A great deal of Farcy was about, but was unnoticed because inside the legs and groins—these horses were worked. At one time he knew exactly where to find cases, but now he never saw one; if he saw a possibility of recovery, he would be the first to do his best towards that end. In valuable horses, where the animals were more or less vigorous and good-conditioned, it was worth while to take some trouble, and there was some merit in success.

Mr. FURNIVALL, replying to a question asked by the Secretary, with reference to the horses, said two were hunters, the other three carriage horses; the cost of the three was £4 each, the other two £5 each; they were from eleven to thirteen weeks getting well; he afterwards sold them with a written warranty at Firmin's, and they realised from forty-five to fifty guineas each.

Mr. WOODGER, jun., was inspector in 1865-6 and went through many sheds and found several instances; some cows stood against the disease and never had it, others had it two or three years later. The second time we had Cattle Plague there were a lot of Dutch cattle had it, these were less severe than in 1865-6. He wished to know when Mr. Furnivall tried his experiments (in reply, during 1865), and remarked that he had given no reason *why* he thought inoculation was a preventive to disease.

With reference to inoculation for Pleuro-pneumonia, he had, when inspector, in 1865-6, inquired into it; he knew it had been practised for many years. Mr. Priestley had inoculated thousands. Men with only three or four cows rarely had it done, for fear of losing a cow, but large cow-owners did not mind that; he had never inoculated a cow.

After further discussion it was proposed the subject be adjourned, but on an amendment being made and put to the meeting, the subject was then closed, and the proceedings terminated.

## LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

THE usual quarterly meeting of the above Association was held at the Blackfriars Hotel, Manchester, on the 13th day of April, 1880; Wm. Dacre, Esq., President, in the chair.

Mr. C. E. Challinor proposed, as member of this Association, Mr. T. Stone, of Walkden; seconded by Mr. Litt, of Bolton, and carried. Mr. Challinor also nominated Mr. A. W. Briggs, of Bury. Mr. A. Polding nominated Mr. James Polding, of Burnley.

An adjourned discussion then took place on the President's address, bearing principally upon the penal clause, exemption from serving on juries, and the desirability of students serving an apprenticeship. The discussion was very animated, and the following gentlemen took part in it—Messrs. P. Taylor, T. Greaves, T. Taylor, W. A. Taylor, Wm. Whittle, Wm. Woods, C. Elam, G. Morgan, R. Reynolds, and the President, all being of opinion that the carrying out of such measures would be to the advantage and advancement of the profession. The following resolution was then proposed by Mr. W. A. Taylor, seconded by Mr. T. Taylor, supported by Mr. T. Greaves, and passed unanimously—"That this society views with great pleasure the action already taken by the Council of the Royal College of Veterinary Surgeons in order to endeavour to obtain for the profession a penal clause; and further, this society hereby wishes to record its willingness to render hearty support, pecuniarily (if necessary) and otherwise, to the Council in their efforts to procure the object inview."

Mr. T. Briggs, F.R.C.V.S., then read an interesting paper on "Some of the Products of Inflammation."

He said:—At the last meeting of this Association, our energetic Secretary, Mr. Locke, insisted upon my reading the paper of this evening, as an earnest of my willingness to contribute my quota. As a junior member of the society, I decided upon a scientific subject, in the belief that the selection of a treatise of such principles as underlie our daily experiences would be an appropriate method of calling forth the valued observations and experiences of our senior members.

At first I mapped out more than I have since thought it wise to attempt to exhaust.

I propose to describe and illustrate to you the anatomy of inflamed tissues as generators of pus, together with a brief sketch of the nature of repair by inflammatory new formations. At the outset I must acknowledge the assistance of my brother, Mr. A. W. Briggs, who undertook to illustrate the subject by this series of diagrams.

In discussing suppuration as one of the products of inflammatory action, it is necessary to allude briefly to the properties and composition of pus. Healthy or laudable pus is defined as "a creamy, thick, opaque, and homogeneous fluid; communicates an unctuous feeling when rubbed between the fingers; is of a yellowish tint; sweetish or insipid; and while warm gives off a peculiar mawkish smell." If allowed to stand in a test tube, it separates into an upper clear, thin layer, and a lower yellow sediment. The latter consists of pus-corpuscles, the former being a fluid intercellular substance. On examination under the microscope, pus-corpuscles assume an appearance of finely punctuated globules, containing three or four dark nuclei. Acetic acid dissolves the pale granules of the protoplasm, and brings into view the nuclei, which are not acted upon by the acid. Alkalies readily dissolve the

pus-globules, and afford a confirmatory test of the nature of urinary and other purulent deposits.

Von Recklinghausen described the above characters as exhibited by dead pus-cells under the microscope. Max Schultze observed, however, that pus-cells in a moist, heated chamber exhibited amæboid movements, like other clumps of living protoplasm. The diagram No. 1 is intended to show the three different conditions of pus-cells.

The chemical examination of pus has proved that it consists of water, proteid substances, including choleaterim, salts, and so-called extractives. Dr. Walshe remarks the peculiar property of pus in resisting decomposition, and that while it retards the putrefaction of substances immersed in it, it would appear to actually dissolve a piece of muscle without putrefaction. In treating of the source of pus, I must again refer to the separation, on standing, into serum and corpuscles. The agreement of the former, or liquor puris, with blood serum in its characters, has led authorities to regard it as exuded liquor sanguinis.

The origin of pus-corpuscles has been the subject of much controversy. I will not enter into a lengthy discussion of the theories advanced by the different pathologists.

In our search for the origin of pus-corpuscles, it is well to take a comprehensive view of the tissues in which cells agreeing more or less with many of the characters of pus-corpuscles are to be found. For example :—

Firstly, corpuscles largely circulating, in the blood-vessels known as white blood-corpuscles, and in lymphatics as lymph-corpuscles, present characters closely resembling pus-cells.

Secondly, connective tissue, bone, and cartilage consist of cellular and intercellular elements. The former are granular nucleated masses of protoplasm, with or without branches, known in connective tissue as connective tissue-corpuscles ; in cartilage as cartilage cells ; and in bone as osseous corpuscles. In addition to these, the fixed, or stationary corpuscles, there exist in connective tissues certain cells named wandering cells, first described by Recklinghausen. The so-called wandering cells are identical with blood and lymph-corpuscles.

Thirdly, there are also, entering into the formation of skin and mucous membranes, cells constituting a distinct layer on the surface, known in the skin as epidermis, and in mucous membranes as epithelium.

Fourthly, the cells occurring in the various glandular organs forming the actively secreting or excreting elements, in many cases of the epithelial type, should be enumerated amongst groups presenting some points of resemblance to pus-cells.

In 1867, Professor Cohnheim, of Berlin, minutely described the process of emigration of leucocytes, or white blood-corpuscles. In the diagram No. 2, which is copied from one by Dr. Caton, in the "Journal of Anatomy and Physiology," 1871, a blood capillary and small vein are represented, and you observe the white blood-corpuscles in contact with the walls of the vessel, some of them with small processes, others with larger processes, until at last the whole corpuscle becomes extra-vascular. Thus we have introduced into inflamed tissues cellular emigrants from the blood-vessels.

Although two Englishmen—Dr. Addison, in 1842, and Dr. Augustus Waller, in 1846—had detailed similar phenomena, it was not until after Cohnheim's investigations that this migratory process occupied an important place in pathology.

Inflammation of connective tissue, tending to suppuration, has been long known as phlegmonous inflammation. Direct anatomical examination has disclosed certain naked-eye characters presented by the affected part when superficial—but to these I need not do more than cursorily allude—such as

swelling, redness, etc. Microscopic investigation has shown that the cells increase in number at the expense of fibrillar intercellular substance, which gradually disappears.

This diagram, No. 3, will render the formation of abscess in connective tissue more clear. You notice that the young cells are collected in patches, corresponding to the site of the original connective tissue-corpuscles, and that, in the middle of the drawing, the smaller collections have become fused. It can be readily seen how these groups may extend irregularly in their circumference. Formerly Virchow, in his "Cellular Pathology," asserted that the groups of pus-cells were produced by the multiplication of the previously existing connective tissue-corpuscles ; but taking into consideration Cohnheim's researches, we can now say that many, if not all, of these cells are leucocytes escaped from the blood-vessels of the tissues. I may here allude to the circumstance—of which I shall speak more fully hereafter—that by artificial injection capillary vessels have been shown to exist in the form of loops around these collections.

Thus is demonstrated the practical fact, the pyogenic membrane of the older writers consists of the circumferential layer of young cells or leucocytes, lying amongst loops of capillaries. By the aid of diagrams 4 and 5 you may gather more clearly what I wish to convey. The pyogenic membrane, in short, consists of granulation tissue.

The best illustrations of proliferation of tissue-corpuscles can obviously be obtained by studying the process of inflammation in the least vascular tissues, such as cartilage and cornea.

Redfern, in the *Edinburgh Medical Journal* for 1849, described in minute detail the changes observed in ulceration of articular cartilage. He recognised that after the introduction of a seton, the first departure from health consisted in an enlargement of the cartilage-cells, which became five or six times their natural size ; at the same time they became irregular in their distribution in the cartilage. The diagram No. 6, representing the changes seen in inflamed cartilage, is copied from one by Cornil and Rauvier. The normal cartilage-cells are depicted at the left-hand corner ; and a little to the right the cells enlarged with many nuclei ; still further, you see the cells multiplied within their capsules. At the extreme right hand a mass of young cells are illustrated now occupying the extent of the original corpuscles and matrix. The matrix, bluish-tinted, gradually breaks down and disappears. Redfern thought that the young cells thus produced did not become pus-cells ; but Weber subsequently showed that pus-cells may then be generated. The series of changes I have briefly sketched constitutes an important step in the doctrine of parenchymatous inflammation.

Similar phenomena have been recorded in inflammation of the non-vascular cornea by Strube, and is also by Virchow. Acute catarrhal inflammation, or inflammation of a mucous membrane has afforded examples of suppuration on epithelial surfaces. This diagram, No. 7, after Rindfleish, is intended to represent the appearances presented by inflamed conjuctiva on a vertical section. You recognise the epithelial elements, tinted yellow, and underneath these the sub-mucous connective tissue. The generation of pus from the actual elements may have a double source. If the pus-cells on the free surface of the epithelium, as seen in the diagram, are produced by proliferation of the epithelial cells themselves, it is evident that pus may be formed without abrasion of the surface. If, however, the pus-cells owe their origin to multiplication of the deeper connective tissue-corpuscles, ulceration of the superjacent epithelium must ensue.

It is now maintained that pus-cells take origin by proliferation of the deeper epithelial cells. In the same diagram some large so-called mother-cells are displayed, with their contained broods, which (broods) are expelled

as pus-corpuscles. It has been suggested by Volkman that these mother-cells have simply derived their contents from the young cells of the underlying connective tissue. The mother-cells, therefore, are capable of a double interpretation, that is to say, the young cells are taken up by an epithelial cell from without, or produced by endogenous multiplication in the epithelial cell itself.

The origin of pus in glandular abscess has been ascribed to multiplication of the proper glandular cells, and to the connective tissue-corpuscles having a similar double source, on which I need not dilate.

Having brought before you some points in connection with the formation of pus in abscess and on mucous surfaces, I will now allude to the connection of pus with granulation tissue as seen in wounds.

Before commencing this portion of my subject, let me shortly describe the structure of granulation tissue.

Inflammatory new formation, or ordinary cellular tissue as observed in the healing of wounds, was designated by Virchow "granulation tissue," and by Rindfleish "germ tissue." It consists of a greater or less number of cells agreeing with the leucocytes of the blood, or the wandering cells of connective tissue. By a reference to the diagrams 4 and 5 you notice the round cells surrounding fine capillary loops, tinted red. The bright redness of granulation tissue is due to the blood shining through the transparent young cells. The tissue is very vascular. A granulating surface is not even and smooth, but presents minute granular or papillary eminences due to miniature heaps of the cells. Let us now inquire whence these young cells come? Cohnheim made some interesting observations with the view of determining this point.

I have spoken of the migration of white blood-corpuscles, as illustrated in diagram No. 2. Cohnheim introduced aniline into the lymph-sac on the back of a frog, and after cauterising the cornea of the animal, he found, at the irritated spot, wandering cells exhibiting the aniline staining. He therefore came to the conclusion that the inflammatory cellular infiltration consists of emigrated leucocytes.

It now remains for me to direct your attention to certain connections between granulations and the healing process. Let me recall to your recollection some of the naked-eye appearances which are observed in a gaping wound, or a wound attended with loss of substance. After the first twenty-four hours, the margins are slightly reddened, somewhat swollen, and sensitive to the touch—the same symptoms as in closed wounds. For the first day or two the surface looks grey and gelatinous, with perhaps a trace of redness; small fragments of dead tissue are adherent to the surface. On the third day the wound "cleans off," and if examined with a lens of low magnifying power, fleshy warts or granulations are seen. For the few subsequent days the granulations become greatly developed and the fluid flowing from the surface, of creamy consistence, presents the characters of pus already described, and in the words of the old authors, "*pus bonum et laudabile.*"

The changes I have just enumerated are susceptible of great variation. According to the size of the dead masses of texture, the loosening of larger masses requires a longer time, but the pathological process is in all cases the same; the line of separation exhibiting groups of small cells. In diagram No. 8, which illustrates the separation of a slough, you recognise, by difference in colour, the living textures below, the textures above, and in the boundary between the two, the active cellular elements, which, by a process of absorption, loosens the dead from the living. I cannot do better than ask you to inspect the diagram, No. 4, which is taken from Billroth's work on "Surgical Pathology." A section of a granulating wound is shown, and in order to bring out the distinction between the pus and the granulation tissue-cells, the former

are represented as having been acted upon by acetic acid, and forming a layer on the surface of granulation cells. You observe the capillary loops are tinted red, and groups of young cells are seen lying amongst them.

From these remarks you will gather that pus is one of the products of granulation cells. When granulation tissue grows rapidly, owing to irritation or other causes, pus formation is more marked. Early in my paper I followed the mode of formation of abscess in connective tissue. May I ask you to compare the appearances presented by the so-called pyogenic membrane and the healthy granulating surface by reference to diagrams 4 and 5. The pyogenic membrane has the similar small-celled structure and the similar capillary loops.

In the main, the great practical difference is this: that the pyogenic membrane, in the recent condition, forms a complete retention sac, whereas the granulation surface of a wound is open.

We naturally ask ourselves: How is it, that an abscess continually grows larger by increase of contents? Unless some foreign or dead bone, as dead bone or slough, is present, the irritation of the granulation tissue of the pyogenic membrane is kept up, principally by the tension of its contents. Of this we have proof by the physical signs and the pain of which the animal gives evidence

The young cells exert a disintegrating action on surrounding structures, following the direction of least resistance, until the abscess "points" at some free surface. Poultices and other form of moist heat favour the dissolution of the textures, by rendering them more permeable to fluids.

Antiseptic surgery, by its results, has shown that when such a collection of pus is laid freely open, and tension removed, the granulations of the pyogenic membrane behave as do those of the ordinary healthy healing wound, to which I have already directed your attention—that is to say, where the sac-like pyogenic membrane is opened out, its purulent discharge gets free vent, and it is reduced, somewhat imperfectly, to the condition of an ordinary granulating surface, as in a healthy ulcer. The opening of an abscess removes the irritation produced by tension, and if external irritating conditions be kept out, as by appropriate antiseptic dressings, granulations have been seen to grow without the production of an atom of pus. So far the cells of granulation tissue have been conclusively shown to be derived from emigrated blood-corpuscles and proliferated tissue-cells. The relation of granulation tissue to the healing of wounds and the secretion of pus, together with the modifying influence exerted by irritation on pus formation, has been established.

A question now arises, Is pus the only product of granulation tissue? Granulation tissue grows, and suppose the process of growth went on, we should find a fleshy tumour, consisting of small round cells, like white blood-corpuscles, with little intercellular substance—in fact, we have in granulation tissue, an identity in structure with what is known as a round-celled sarcoma. It is needless for me to draw your attention to the fact that these round cells of granulation tissue are of the same structure as the embryonic cells from which all cells are primarily developed.

In the diagram No. 9 these young spherical cells are represented in a healing sore, and at the right-hand corner you observe, coloured yellow, a formation of cuticle or epidermis; deeper you notice some of the cells of the tissue become spindle-shaped, and develop into fibrous tissue; simultaneously with these changes, the secretion of pus commences to disappear. At the right-hand corner the cuticular formation is shown.

Why does epidermis, in cases where the skin has been wholly destroyed, form only at the edges of a wound? This has been a tedious problem to most observers.

The fact that a successful graft leads to an island of developing epidermis is capable of two explanations. The newly-planted epidermic cells, like those at the edges of the wound, may themselves proliferate and develop a progeny of scales by their multiplication ; or, to speak more definitely, epithelial scales arise by multiplication of previously-existing epithelial cells.

The second interpretation suggests that the young cells of the granulation tissue are influenced by the nature of the surrounding structure. The skin-graft acts, we may say, as a decoy, leading the young cells of the granulation tissue to develop like unto it, into epidermic scales of the cicatrix. Similarly, the deeper connective tissue-elements may be looked upon as exerting the influence of their presence on the deeper cells, leading to the development of them into connective tissue.

It is extremely interesting to find that granulation cells formed to repair a breach of osseous tissue, such as after fracture, necrosis, or abscess, develop into bone. In the development of granulation cells into bone, however, it is of the highest importance that absolute immobility be maintained by some suitable means ; the reason seems to be, that bone normally is inflexible and passive, and that, so to speak, unless the natural condition of texture be maintained, the decoy influence is not exerted. This is well illustrated in fibrous union, after a fracture of bone, when the two ends have not been kept in quiet apposition.

Fibrous tissue is essentially a flexible and yielding structure. Under circumstances, therefore, encouraging mobility, granulation cells develop into fibrous tissue, even in the immediate neighbourhood of bone. Granulation cells are incapable of reproducing muscular and active glandular tissue. In these situations the ordinary fibrous cicatrix, as represented in diagram No. 10, is developed.

Gentlemen, in this brief outline of the microscopic anatomy of suppuration and granulation tissues, it has been my endeavour to put the matter clearly before you. I do not claim for my paper anything more than an embodiment of many of the current views on the subject. To be conversant with the nature of the material with which we have to deal in these processes should be our aim. Underlying our successful treatment of most, if not every one, of those surgical cases in which pus and granulation tissue are important factors, is a correct appreciation of these principles, so far, at least as they lead us. I know that my subject is deserving of careful attention, and that it has a great interest, in its scientific aspect, for the practical man. I know, too, that whilst I have barely touched upon some important points, I have overlooked others equally important. I have done my best to please you, and I hope you, gentlemen, will do your best to please me, by taking up an instructive discussion, and that you will fill up the gaps I have left.

The paper gave great satisfaction, and led to an interesting discussion. A hearty vote of thanks was accorded the essayist.

The usual vote of thanks to the Chairman closed the meeting.

SAM. LOCKE, *Hon. Sec.*

## WEST OF SCOTLAND VETERINARY MEDICAL ASSOCIATION.

A MEETING of members of this Association was held in the Veterinary College, Glasgow, on Wednesday, the 31st March ; Principal McCall, President, in the chair.

The following gentlemen, amongst others, were present :—Professor Walley, Edinburgh ; Messrs. Robinson, Greenock ; Mr. Constable, Inchture ; Mr. McConnell, Coatbridge ; Mr. Kerr, Beith ; Messrs. Robb, Mitchell, Anderson, Macqueen, and Anderson, Glasgow.

Professor MCCALL, in opening the meeting, spoke as follows :—

Gentlemen,—Twenty-two years ago, in this same city, and while connected with the Edinburgh Veterinary College, I had the honour of assisting at the birth of this the first veterinary medical society, and of delivering the first inaugural lecture which had been delivered in any veterinary medical society in these kingdoms. That honour, however, was conferred upon me at the request of, and as the substitute for, my dear old friend and instructor, the late Professor Dick. That meeting was held within the Athenæum, and included the principal veterinary surgeons in the west of Scotland; and among the number, Messrs. Cockburn, Anderson, McLean, Marshall, Bryce, Aitken, Steel, Moir, Robinson, Donaldson, and many others. Of the few names mentioned—sad to say—very many have fallen by the hand of death, and few of us are left to reassemble this day; nay, I think with the exception of Mr. Anderson and Mr. Donaldson (who have retired from the labours of their calling, to enjoy, as we hope, a few years' rest in the bosoms of their families), Robinson, Moir, and myself, all are gone. Then I stood forth, the stripling in arms, the youngest soldier in the ranks; now I appear the veteran in arms, the oldest general in the field. Such, gentlemen, is life, and morals innumerable might be drawn from the consideration of what I have stated, but in the meantime I will not, in that direction, trespass on your time.

To-day, gentlemen, the object we have in view in gathering ourselves within these walls, is to resuscitate the society inaugurated in 1858, and then denominated the West of Scotland Veterinary Medical Association. And in awakening it to life, I shall probably handle it a little roughly, but as I assisted at its birth, and have regularly watched its growth (although, it must be confessed, for many years at a distance), and am well aware that it is not so lifeless as it appears, trust me, a little plain speaking will do it good. In awakening it to life, I shall very briefly refer to a few of the advantages which may be expected to arise out of its resuscitation and continuance in active life, provided the energies of its members are concentrated and harmoniously displayed. It is a familiar expression, and true to life, "No man liveth to himself," yet how very apt are we, in the battle of life, so to push forward as if the aphorism were false, as if each individual lived for himself, and for himself alone. Now, to my mind, we could not have conceived a more certain means of recognising and developing the principle referred to, and of demonstrating that we live for the good of each other, as well as ourselves, than by resuscitating this society. Here we meet on common ground, and with common interests, and the rights and the privileges of each member ought and shall be equally respected. This, I am sorry to say, has not hitherto been the guiding principle of the society inaugurated in 1858; and with all deference, has been the principal cause of the apathy exhibited by many of its best friends. But, turning from this unpleasant aspect of the subject, the times in which we live are proverbial for the formation of societies, associations, and such-like kindred institutions, and if for no higher reason than keeping pace with the times, and continuing the good example first set by those who inaugurated this society, and which has been imitated in so many other towns and cities, it were high time we had again enlisted under one common banner. In the arts and manufactures the benefits of co-operation are admitted on all hands, and to come abruptly to the point I am aiming at, may co-operation not as much benefit veterinary science? There are many aspects in which we might view and answer such a proposition, but time will only permit me to select two. Firstly, as benefiting the pecuniary interests, and elevating the status of the profession; and secondly as advancing our knowledge of the science and the art. As regards the first, I think it will be freely admitted, that according to the present constitution of our country, with a few exceptions, the pecuniary emolument

derived from the practice of a profession, is an index, so to speak, of its social standing. Now co-operation has invariably proven itself directly or indirectly to be a certain means of securing the pecuniary interests of parties.

"The labourer is worthy of his hire," and however laudable may be our desires, we can neither benefit the public nor ourselves by tendering our services at less than their value. But, it may be asked, what is their value, pecuniarily expressed? I should not like to appraise them. It is a matter, so far, of conscience with each member of the profession, and of policy with the body collectively; but under any circumstances, surely a sum considerably greater than is asked and obtained by a city porter for carrying a parcel, say the same distance from our places of business as we make a professional call. Yet we all know that there are persons in our profession who travel about, and charge fees sometimes less than a city porter. I would be the last to advocate a policy which would press hard upon our clients; but by all means let us charge a fee becoming a professional man in all cases where our clients can afford to pay, and where they cannot, from poverty, let us bestow our services ungrudgingly and without a fee. I am not given to charge high for my services, nor do I put stress upon my position, and frequently I have a cheque for a larger amount than my account enclosed to me; nor do I refer to the subject of charges because I have felt the pressure of such upon my business, not at all; but I have heard others deplore it, and moreover I have seen its bad effects. It has yet to be proven that a reasonable charge is counter to the interests of our employers and the welfare of our patients; for services poorly requited, as a general rule, are grudgingly performed and imperfectly discharged. It is a question, however, how far societies formed for the sole and direct purpose of fixing fees to be charged for services rendered have been productive of good, either to the individuals themselves or the public at large. Indeed, I incline to the opinion that they have done more harm than good; nor do I wish this society to infer that I desire its members should fix a scale of fees to be charged for their services. In this and similar matters the society can only appeal to the feelings and honour or each of its members, and suggest the urgent necessity there exists for its members being more intimately linked and acquainted with each other. As professional men we do not cling sufficiently to each other; the chain which binds us is not sufficiently strong. By periodically calling you together, and thus affording an opportunity for drawing out the sympathies of brotherly love, which we in common, in a greater or less degree, possess; and by guardedly exercising a spirit of charity towards each other in our intercourse, this Association is eminently suited to advance the pecuniary interests of the profession and elevate its status. And now let me direct your attention to the second aspect of the subject or proposition, viz., the power or influence this society may exert in advancing our knowledge of veterinary science and art.

The science which we profess, as all of you are well aware, belongs to the class termed *inexact*, as distinguished from the *exact*; it has also its art as well as its science. These relations are frequently but ill-defined in the mind of the practitioner, and as a consequence in practice and other ways they are confounded. If this society is to assist in advancing the studies of our profession, inquiries must be conducted on a liberal basis, and with due regard to all conditions. It will not do to ignore theory at the dictum of practice, as some minds in the past history of this society have unsparingly done. I do not anticipate that this society, or others of a similar character, will revolutionise the theory and practice of veterinary medicine, inquiries tending to such results are more within the province of our colleges; but, as the teaching institutions are imperfect in many respects, and unable, from

pecuniary and other causes, to conduct experiments and researches on a sufficiently extensive scale, it is wonderful what an amount of assistance the colleges might derive through the co-operation of veterinary medical associations. In particular I think provincial veterinary medical associations might be the means of shedding much light upon the diseases of cattle and sheep. Country practitioners have daily opportunities of studying the diseases of cattle and sheep, as they affect them in a state of nature; whereas town practitioners have few such opportunities. In prosecuting your studies you have also the benefit of the previous history of the animal, with its idiocrasy, and many other little details, which, when placed together, make not only a very interesting and connected account of the case; but further, from its accuracy, it forms the basis from which sound deductions may be drawn, and clever views promulgated as to the pathology and treatment of such affections. I would therefore strongly urge the provincial members of this society to bestow special attention upon the diseases of cattle and sheep, and as far as practicable prosecute researches bearing on their origin and nature. Proclaim the results of your inquiries after they have been subjected to the ordeal of discussion at our meetings, and in doing so you will confer a favour upon the whole body of the profession, and in no inconsiderable degree advance the knowledge of the science, and the practice of the art.

Through the kindness and impartiality of the editors of the *Veterinarian* and VETERINARY JOURNAL, you will always find the columns of our professional journals open to receive your contributions, and I would suggest that you take greater advantage of this boon than hitherto has been the case. A paragraph of a meeting, with the mention of members present, and the name of the subject discussed, will do little for any cause, and is neither creditable to the member introducing the subject, nor to the gentleman acting as secretary for the society.

But to return, there is scarcely a disease regarding the pathology and treatment of which two opinions may not be entertained. These opinions may be founded upon principles widely different, or so closely allied, that to some minds they appear a distinction without a difference. But as two of us cannot look through the same pair of glasses at one and the same moment of time, and even although we could, as vision differs in degree, we might fail in recognising the same object; and as reason, like vision, differs also in degree, and at most is an index of the capacity of the mind in that particular direction, we should not be in haste condemning the opinion of our fellow, as the defect, if one, may, after all, be our own and not his. In discussion there are some minds very rabid and intolerant of the opinions of others, and, with all deference, I have observed this condition as frequently in the old as in the young. Such a condition of mind is most disagreeable, and apt to make the possessor believe that when you challenge his theory, you attack his veracity and honour, and thus insult his dignity. Now I beseech of you, above everything, if you desire or expect the society to be a means of cementing you more closely together, if you wish it to be a mutual benefit and pleasant retreat from the cares of business, if you wish it (as it is calculated to do) to send you home better friends with your professional brethren, and better friends with yourselves, abstain and eschew all tendency to that nasty and unhappy condition of mind I have termed rabid and intolerant. Let your discussions be conducted with calmness, singleness of purpose, and in a spirit of tolerance, and while striving to enforce the claims of your doctrine, let your language and your manner prove that you are speaking to a point, and not for argument's sake or a desire to differ.

With these few hurried and disjointed remarks, and thanking you, which I now beg to do, for having placed me in the presidential chair, and for the

spirit in which you have evidently accepted my suggestions, I shall now offer a few remarks upon "Stricture," or Hour-glass Contraction of the Stomach of the Horse, and Vomition in the same subject.

A short report of this will be contributed to the next number of the VETERINARY JOURNAL. Also a description of two ingenious compound instruments, devised and introduced to the members by Professor Walley.

JAMES ANDERSON, *Secretary.*

## YORKSHIRE VETERINARY MEDICAL SOCIETY.

THE usual quarterly meeting was held at the Queen's Hotel, Leeds, on the 20th of April, the President, Mr. W. G. Schofield, in the chair,

Dr. Goldie, medical officer for the borough of Leeds, Messrs. R. L. Robertson and F. A. Cuthbert, were present as visitors.

Mr. R. L. Robertson, Leeds, was nominated for membership.

The PRESIDENT, in referring to the death of Mr. Cuthbert, alluded in feeling terms to the loss the Society had sustained in its respected Treasurer, and moved that a vote of condolence be sent to Mrs. Cuthbert and family. This was seconded by Mr. Freeman, and supported by Mr. Naylor.

Mr. J. H. Ferguson was elected Hon. Treasurer, *vice* Mr. Cuthbert.

The SECRETARY read a letter from Mr. Greaves, stating that some steps were being taken to obtain a penal clause in a new Bill. After some discussion, in which Messrs. Naylor, Freeman, P. Walker, the President, and Secretary took part, it was unanimously resolved that "the Society support the movement with all its available means;" and it was also resolved, on the motion of Mr. Naylor, seconded by Mr. Parlane Walker, that the President and Secretary draw up a petition to memorialise the Council to press forward the Bill without delay.

Mr. PARLANE WALKER then read an essay on diseased meat. In the discussion that ensued, Mr. Freeman made some remarks on Tuberculosis or Calcareous deposits, stating that, in his opinion, the deposits were often caused by the nature of the soil upon which the animal was grazed.

Dr. GOLDIE said that he was pleased to be present upon this occasion; he thought medical officers of health were fully qualified to examine and determine as to the condition of the internal organs of animals, and whether their flesh was fit for human food; he also detailed the different modes of slaughtering animals as practised in this country, and exhibited some specimens of diseased lung-tissues, and pointed out the different pathological appearances presented.

The discussion was carried on by Messrs. Peter Walker, Freeman, Anderton, and the Secretary.

Mr. FREEMAN exhibited a remarkable specimen of Osteo-porosis.

A vote of thanks was unanimously accorded to the essayist, proposed by Mr. Naylor, seconded by Mr. Freeman. A vote of thanks was also accorded to Dr. Goldie for his able remarks upon the subject matter of the essay.

The following is Mr. Walker's essay:—

A short time ago our worthy secretary did me the favour to come over to Halifax to give his professional opinion on a peculiar case that was then in my hands; and I should not have presumed to obtrude myself upon your attention, were it not at the instigation of our friend Mr. Broughton. But, possibly having in mind the exigences of his position as secretary to provide something at least for your consideration, he suggested that I should afford him a "quid pro quo" for his able assistance, by giving you a paper on the subject of the case, a discussion on which in his opinion would be useful to the society.

The paper may be entitled what is wholesome and what is unwholesome meat.

On the 4th February last, I was requested to visit the farm of the defendant in this case, and on my way to the farm I got to know from disinterested parties that the cow whose carcase I was going to examine was really hanged, but had been stuck before it was dead. On my arrival I examined the carcase and internal organs minutely, and smelled it all over; and from the appearance of the carcase the characteristic symptoms of the internal organs, both horns knocked off, the whole place bespattered with blood, and that the animal was in a perfect state of health the night before, coupled with the straightforward tale of the defendant, and his brother and sister, I was fully satisfied the animal was strangled, and was stuck before the heart had ceased its functions. On the face of these facts, I gave a certificate that it was fit for human food, and the man took it to Halifax market. But on its arrival there it was condemned and burned, and the man summoned. He duly appeared before the magistrates, and was confronted by a member of the sister profession, the medical officer of health for the borough, a M.R.C.V.S., an empiric, a ruling butcher and a market meat-inspector. The owner of the animal produced my certificate, and after some discussion the magistrates adjourned the case for me to appear and defend the certificate. I did appear, in company with my friend Mr. Broughton and my brother Peter from Bradford. The line that the prosecution took was that the flabby nature of the carcase, and the congested appearance of the lungs, and softness of the heart and liver—all indicated, in their opinion, that the animal had been diseased for some time. The medical officer of health went the length of saying that the lungs, heart and liver were in a rotten state. This was the kind of evidence we had to refute, and the prosecutor's cross-examination assumed the following shape. I may say, in the first place, we proved that the animal was in a perfect state of health at 10.30 the night previous, and was found almost dead from strangulation at 3.30 a.m. In cross-examination by the town clerk assisted professionally by the M.R.C.V.S.:—

*Q.* Did you examine the lungs, and what method did you adopt?

*A.* I did, in the customary method with my hands and eyes.

*Q.* Did you make a section of the lungs?

*A.* I did not consider it necessary to make a section, being so conversant with the unmistakable appearances of congested lungs from strangulation, having had two cases immediately preceding this one—when once seen can never be forgotten.

*Q.* Would you believe the lungs to become dark in colour?

*A.* I would, from the fact that glandular substance highly congested with blood, and exposed to the atmospheric influences for a short time, soon assumes a different aspect, and might have the appearance and consistency of tar when cut into.

*Q.* Was the heart flabby?

*A.* Yes.

*Q.* Do you consider a flabby heart fit for food?

*A.* It depends on the predisposing causes and the surroundings of the case.

*Q.* What are the predisposing causes in this case?

*A.* This poor animal was hung by the neck probably for a number of hours, struggling with pangs of death to relieve itself, and in the greatest state of excitement and perspiration until eventually it had to succumb to its fate almost thoroughly exhausted, is sufficient in my mind to soften the heart of any animal and for it to remain so.

*Q.* Did you examine the liver, and how did you find it?

*A.* I found it congested in like manner as the lungs.

*Q.* Would you believe it to be watery when we examined it?

*A.* Quite possible that the blood had began to break up and liquor sanguinous had left the solid parts, and might even be oozing through Glisson's capsules.

*Q.* Would, in your opinion, the carting of the carcase nine miles have a tendency to soften it?

*A.* Very possibly.

*Q.* Do you consider soft meat fit for food?

*A.* It depends on the predisposing causes.

*Q.* Can you give any predisposing causes in the case in question?

*A.* Yes, the cow was in milk and lean, and every one knows that the principal stiffening agent is the adipose tissue or fat it contains. The great exhaustion the animal suffered. It is an authenticated fact that a hare run to death is not so firm and valuable in the market as one that has been coolly shot. In a man strangled the *rigor mortis* is very mildly developed, and this might also hold good in the lower animals.

*Q.* Don't you know that this animal died of Pulmonary Apoplexy?

*A.* We have no such disease in cattle.

*Q.* Suppose we call it, instead, "Congestion of the Lungs"?

*A.* I have never found congestion of the lungs as an independent disease in cattle; it is always due to some mechanical agent, such as a potato or a turnip in the throat, or from strangulation; and the only case I know on record of congested lungs as an independent disease arose at Smithfield Show, London, and which occurred in plethoric animals inhaling a dense foggy atmosphere. Of course we have congestion of the lungs in the first stage of inflammation.

*Q.* Do you consider dark-coloured meat fit for food?

*A.* It depends on circumstances.

*Q.* Suppose this animal was dead a few hours before it was stuck, would you consider it fit for food?

*A.* I do, inasmuch as in a few hours there is no time for diseased products to get developed. If otherwise, why do not hares, rabbits, and other animals that are trapped and ginned come under the category of unwholesome food?

Oral confirmation of this evidence was given by Mr. Broughton and my brother, and written confirmation of our position was produced in court from Professors Williams and Axe; Messrs. Greaves and Taylor, Manchester; Robinson, Greenock; and the case against the owner of the animal was dismissed. You will see from this cross-examination that the evidence in support of the case against the owner was altogether lame. What did the Medical Officer of Health know about congested lungs from strangulation, and the appearances they present when for some time exposed to atmospheric influences? In his cross-examination he said the appearances of the lungs in question were not what he would expect to see from strangulation. I infer from that, and I have it on good authority too, that he never saw congested lungs from strangulation in his life, either in the human subject or any of the domesticated animals. When we returned from court another carcase was in my yard to be examined, and which had been slaughtered at my suggestion owing to prolapsus of the uterus. The history of it was well known, and a certificate was given that it was wholesome. This case, too, would have been fought, but the animal belonged to a gentleman they did not care to encounter, consequently it was passed. A great deal of misconception obtains as to what is wholesome and unwholesome food, and of course it very much depends upon the antecedents of the case, and these two cases only indicate on what slender hypothesis meat is condemned, and how necessary it is to defend your own well-ascertained convictions. These

two carcases were undoubtedly fit for human food. The prevailing method of judging meat is to have it firm, white, and clean, and to examine the internal organs and see that they are free from disease. This is a very safe system, but it does not hold good at all times ; inasmuch as an animal that has suffered from some purely mechanical lesion, and has undergone more or less exhaustion—the meat of such will be more or less soft and watery, but still fit for food. I maintain the more irritative fever and exhaustion an animal suffers you have a corresponding amount of softening of the muscular and other tissues. Take, for example, a horse that has been overdriven, and dies from sheer exhaustion. On *post-mortem* examination we find the whole of the internal organs and muscular tissues soft ; hence the wisdom of allowing animals to rest after a fatiguing journey before slaughtering them. Another erroneous practice of condemning meat is from its dark colour. Now meat may have a dark appearance and yet be fit for human food, inasmuch as an animal that has been chased and heated, and then immediately killed will be more or less flabby and dark-coloured. Again, an animal that has suffered irritative fever, or from any tiring lesion, the carcase of such will have a tendency to be dark-coloured. I believe it sometimes happens that as soon as the animal is struck with the pole-axe, death takes place at the heart ; consequently, bleeding under such circumstances will not be so favourable, and the meat will have a dark appearance. Even under the most favourable circumstances of bleeding, the blood is not all expelled from the system ; it is the blood that gives the reddish colour to the flesh, and why should a little extra blood left in the vessels constitute unwholesome meat so long as the blood is pure? The blood is the life thereof, and a commodity that is in daily use. It was affirmed in court by the veterinary surgeon for the prosecution, that no correct judgment could be given until the animal had been dead twenty-four hours. This seems to me a wild proposition ; rather ought we to be able to give a sound opinion immediately after the carcase is hung up and the internal organs examined, providing the history of the case has been also ascertained. Without this it would be impossible in many cases to give a correct opinion, whether it had been dead twenty-four hours or not ; and here I might advance that it would be a wise precaution to give no certificate without having first either seen the animal suffer or ascertained reliably its previous history. And further asking your forbearance in going a little wide of the declared object of this paper, how necessary it is that we should prepare ourselves with all the care and support that our profession offers in defending our position and opinion ! We have to encounter medical gentlemen with all their distinguishing titles, and the weight that those titles too often imparts when the bearer of them trespasses upon our domains ; and the experiences of all of us will bear witness to this. How many times have medical gentlemen come into court and given evidence on things they clearly do not understand, touching our profession, and where, if the least preparation had been made by members of our profession, the opinion of the said medical gentlemen would be shown to be fallacious. There are some things in animal pathology that they may be able to speak accurately upon from their experience of the human subject ; but there are more things in heaven and earth than even they dream of in their philosophy. Let us then be undaunted, even though we have to encounter a physician or two. It is astonishing what ignorance prevails among them when they get out of their own groove, and you would laugh were I to give you the manifestations of this which have occurred in my town. I have already trespassed upon your time more than I had intended, and my object is not to offer you a scientific paper. I should, therefore, content myself by suggesting a few practical hints on the reverse side, by shortly enumerating what I think constitutes unwholesome meat. It is a prevailing practice here

to certify as wholesome food animals that have suffered and even died from Parturient Apoplexy. This I consider highly reprehensible, because it is evidently a blood-poisonous disease, which is highly contagious in the human subject, and, in my humble experience, in the lower animals also. Again, an animal suffering from Phthisis in my opinion is unfit for food; for how often have we found fat and well-fed animals when killed positively full of tubercles, and no purer meat in appearance came into the market—the adipose tissues as white as snow. I would even go the length of saying that the milk of such animals is injurious; yet who will say that they don't find their way into our butchers' shops. It is a disease that is very prevalent in this district, and I think it calls for a stamping-out process in any animal as soon as it manifests itself; for I believe it to be contagious. And not to weary you, should it not be admitted that all animals suffering from blood poisoning are unfit for human food? Also Braxy in sheep, Typhoid Fever and Measles in pigs, come under the same head. These opinions are not advanced in any dogmatic spirit, but simply to excite discussion and to strengthen ourselves to meet these knotty cases which must from time to time confront us.

## SCOTTISH METROPOLITAN VETERINARY MEDICAL ASSOCIATION.

A QUARTERLY meeting of the society was held in the London Hotel, Edinburgh, on Monday the 3rd May, for the purpose of hearing a paper read by Mr. Fleming, Army Veterinary Inspector, on the "Spontaneous Development of Contagious Diseases." This being also the date of the annual general meeting of the Royal College of Veterinary Surgeons, there was a very large attendance of members and other veterinary surgeons from a distance. In the absence, through illness, of the President, Mr. Connochie, Selkirk, the chair was occupied by Mr. Borthwick, Kirkliston. Mr. W. S. Low, V.S., Burntisland, was elected a member of the Association.

Mr. Fleming then proceeded to read his paper as follows:—

Since the introduction of the experimental method of research into the study of disease, great and striking progress has been made in general and special pathology; and while human medicine has been benefited to a proportionate degree, veterinary medicine has largely shared in the advantages it has conferred. And perhaps in no branch of medicine—human or animal—have the benefits to be derived from the experimental method been so marked as in the investigations into the nature of those maladies we term "contagious," "zymotic," or "specific." The spontaneous origin of these disorders had, up to a comparatively recent period, been a generally accepted notion—indeed, an article of faith or doctrine which is, at least for some of these diseases, still held by many medical and veterinary practitioners. But the doctrine of spontaneous origin or generation did not alone find disciples among medical men. Biologists and others believed that at least the more minute organisms could be generated or developed *de novo*, when circumstances were favourable; and only a few months ago a lively discussion agitated the world of science as to whether microscopical germs might not be created in particular fluids, under certain special conditions. This was probably the last occasion on which we shall hear of spontaneous generation; for the admirably-conceived and well-executed experiments of Pasteur, but more especially those of our own countryman, Tyndall, appear to have set the question at rest for the present, if not for ever. But it was not until the adoption of the experimental method in biological research, by men of genius and unwearied industry, that the question of so-called "spontaneous

generation" obtained this definite solution, and the doctrinal notions generally held up to the other day only, received so severe a blow that they may now be considered as dispelled and defunct. These notions were certainly losing their hold somewhat before the publication of the convincing demonstrations of the experimenters I have just alluded to; and it is possible that the increased intelligence developed by the rapid progress of scientific research during the first half of this century did much to bring about more reasonable opinions with regard to the generation of organised bodies. From the very earliest times the most absurd ideas prevailed with regard to the spontaneous creation of creatures—real or unreal—and of the largest dimensions and most complex organisation; and even so late as the time of Spallanzani, the notion of spontaneous generation was so fully and unreservedly believed in, that it was popularly accepted that creatures so large and perfect as mice could be developed *de novo.*

But if the doctrine of spontaneous generation was in some respects absurd in the extreme, yet it produced no very harmful results in a general way; and it was only when it asserted its sway in medicine that baneful effects were observed. The desolating scourges of mankind that swept over wide continents and carried off countless myriads of people, were ascribed, in the earlier ages of the world, to an irate deity or the vengeance of wrathful gods, whose murderous chastisements could only be averted by sacrifices, charms, and incantations. In more modern times, when superstition had less influence on the mind, these pestilences were sought for in, or attributed by the more learned to, cosmical or terrestrial phenomena over which man had no control. The doctrine of contagion was, it may be said, only very recently adopted with regard to the most markedly transmissible of these disorders, and it was far from being universally entertained by medical men or veterinarians; while even among those who most strongly favour it, it never appears to have been doubted that these diseases could be spontaneously generated through certain influences connected with atmospheric or telluric phenomena. But it must be confessed that, among veterinary surgeons in this country, up to a very late date, the doctrine of contagion was not received with much favour, if it was at all understood. Certain it is, that when we were invaded by two of the most serious of all the animal plagues, some forty years ago, their transmissibility from diseased to healthy animals does not appear to have been suspected. They were due to "something in the air," and as the action of this "something" could not be controlled or its effects averted, these desolating pestilences were freely allowed to extend themselves everywhere over the land, and to be carried to our colonies, where at least one of them continues to ravage and destroy—a startling evidence of the results of inacquaintance with their early history, and lack of perception on the part of those who then ruled in veterinary medicine in Britain. This lack of knowledge, and stern belief in the "something in the air" theory of disease, has been a source of terrible loss to the country during the period mentioned, and has done more to bring our agriculture to its present low ebb than almost any other cause which can be named. The ever-memorable invasion of Cattle Plague in 1865 affords a painful instance of the "something in the air," and the "spontaneous generation" fallacy; when the public was misled, and the necessary measures neglected, in order that these hobbies might be ridden. The lesson was a most severe, but it was a useful one; and it did more to abolish these fallacies, so far as they had reference to animal diseases of the contagious class, than anything else that could have happened. Nay, even human medicine reaped much benefit from the scourge; as it was most strikingly demonstrated how diseases, which owe their existence to their contagious properties only, may be checked or completely suppressed.

Thus did public hygiene or state medicine receive one of its most potent arguments for ample recognition by the country, and the advantages of its application to the preservation of the health of mankind and animals obtain its strongest proof.

I have alluded to the experimental method of investigation, as that which has done medicine most service in abolishing the spontaneous generation notion of contagious diseases ; and it must be admitted that we owe it to the microscope to having provided us with the clearest and most satisfactory solution of the problem as to the cause of these disorders ; while the same instrument has lent invaluable aid in settling the spontaneous development question.

To the microscope we are indebted for the establishment of the doctrine of animate contagia, and for all the knowledge we possess as to the physical characteristics of these contagia. It is true that, some centuries ago, the more serious maladies of mankind were supposed to be due to minute organisms, which invaded the body, and produced the disturbances that marked the course of the disorders. Thus, Kircher (*Scrutinium Physico Medicum c. Pestis dicitur.* Rome, 1658), so long since as 1658, asserted that animalcules were the cause of malignant and pestilential fevers, which differed in essence and symptoms according to the nature and venoms of these creatures. The celebrated Dr. Mead (*Exposito Mechanica Venenorum*, 1749,) entertained similar views with regard to the Plague ; and in 1730, Dr. Thomas Fuller, who has given us the first exact description we possess of Sheep-pox in this country, is very explicit. He writes : "My settled opinion is, that in regard every effect is necessarily such as its cause ; it must needs be that every sort of venomous fever is produced by its proper and peculiar species of virus. And that the manner and symptoms of every such fever is not so much from the particular constitution of the sick, as from the different nature and genus of their specific venom which caused them. And I conceive that venemous febrile matters differ not in degree of intenseness only, but in essence and *toto genere* also ; and that venomous fevers are for the most part contagious." (*Exanthematologia, or an Account of Eruptive Fevers, especially the Measles and Small-pox.* London, 1730.) Dr. Fuller also speaks of the contagia as particulate, or consisting of particles.

But it must be confessed that the notions regarding contagious diseases were hazy in the extreme, and it was not until the experimental method and the microscope had been introduced into pathological research that our knowledge of them began to be exact and comprehensive. The idea that the active principles of the contagia were vital, and that each possessed individual characters, was until then mere speculation.

I think the time has now arrived when the knowledge thus acquired should be utilised in formulating something like fixed principles with regard to these diseases, and deciding once and for all whether contagious disorders can or cannot be spontaneously generated. From almost every-day evidence it would seem that no definite opinions are held on this point ; and in our own profession the preponderating tendency is, perhaps, to consider them as capable of being originated, at least in some instances, without any pre-existing contagium. This appears to be the case, at any rate, with two diseases—Rabies and Glanders. I have myself held this opinion, and am ready and willing to confess that, whenever I am confronted with convincing evidence of error, I am not ashamed to admit that I entertained erroneous ideas. We may be wise at twenty, but we should be wiser at forty. For certain other maladies of an exotic kind—as Rinderpest, Foot-and-mouth Disease, Sheep-pox, and Zymotic Pleuro-pneumonia—I have never admitted their possible spontaneous development, at least in this country ; but with regard to Glanders and Rabies, I have, until not long ago, remained in

doubt. I am now entirely of opinion that no contagious disease can be so generated, and the reasons for arriving at this opinion I will give.

By the term contagious or infectious, I do not refer to those disorders solely due to animal or vegetable parasites, of which Scabies and Tinea may be taken as examples; it is generally accepted, I believe, that the acari and epiphytes producing these diseases cannot be developed, except from pre-existing organisms of the same kind. By the above terms I mean maladies which are transmitted from a sick animal to a healthy one by mutual touch or contact, or by particles of matter from the former, suspended in the atmosphere or carried by various media—particles which find admission into the system of the exposed animal by one channel or another, and constitute what is designated the "contagium" or "virus" of these diseases. What differentiates this poison from other animal poisons, such as that of reptiles or septicæmia, is that the minutest quantity will, when introduced into the body, produce its effects as certainly as the largest, owing to its peculiar property of indefinite multiplication; and give rise to as marked effects in the thousandth generation as in the first.

With many of the diseases—according to some authorities, with all—certain organisms have been discovered in the blood and other fluids, which are looked upon as the special agents in producing the characteristic effects that mark each disease. These organisms are the so-called "germs"; and the theory which now generally finds acceptance among the more advanced pathologists with regard to the production of these maladies, is named the "germ theory." This theory is certainly the most satisfactory which has ever been proposed to account for the production, course, and extension of these diseases; and it is supported by all the facts that present themselves in our study of these affections. The particles or germs of a contagium may well and aptly be compared to the germs in the seeds of plants. No plant can be produced without seed, and the germ in this seed must be endowed with vitality—it must be living. The seed requires a congenial or suitable soil, and other accessory conditions, for the growth of its germ; but when buried in the soil, and placed in the most favourable conditions for development, it does not at once become a plant. There is a definite latent or germinative period in the evolution of every plant, during which nothing is seen; but, nevertheless, germination is progressing; then comes the eruptive period, when, certain changes having been accomplished, the young plant becomes visible; then arrives the stage of blossoming and seed production—the seeds ripen, and every one of them can again, under suitable conditions, reproduce the parent plant and multitudes of germinal seeds. Every seed becomes converted into a plant exactly like that which produced it: the seed of a carrot will not produce a turnip, neither will an oat develop a thistle.

> "Like genders like, potatoes 'tatoes breed,
> Uncostly cabbage springs from cabbage-seed."

The seed of each plant has its own special phases of evolution, which are as peculiar to its physical or other attributes; and man can effect but little in modifying these.

Zymotic or contagious diseases, such as those of which I am now speaking, bear the strongest analogy to plants in this respect. Each, I assert, has its own special germ, which can only develop its particular disorder—never any other. This germ can no more be spontaneously developed than can the seed or the plant. It has a life, an individuality of its own, which nothing can transmute or alter. As the carrot-seed will not grow into a turnip, nor the oat produce a thistle, so neither will the germ of Cattle-plague develop Foot-and-mouth Disease, or that of Rabies give rise to

Variola. The germs of each zymotic malady are as distinct and independent as different kinds of plants or different species of animals ; and these germs can be no more transmuted into each other than can the plants or animals. The organism of a susceptible animal receives the germs of a particular disease, as the ground receives the seed—there is a characteristic period of latency or germination, during which the most careful observer can detect no change ; then comes the eruptive period, with the manifestation and definite course of the symptoms, which characterise the malady as distinctly as the leaves, the flowers, etc., characterise the plant, and when the multiplication of new germs has reached its maximum stage, and these can effect any number of other susceptible creatures into which they may be sown. Another feature in these zymotic diseases gives them an additional resemblance to the growth of seeds. One attack protects against another for perhaps years, if not for life—the germs will no longer grow in that soil, and the organism is endowed with immunity. We know that the rotation of crops is an absolute essential in agriculture ; the soil will not for any length of time grow the same kind of plants, and some exhaust it sooner than others.

The analogy between the seeds of plants and the supposed germs of contagious diseases, is still further exemplified in their diffusion. Traffic between different parts of the world has led, as is well known, to the accidental diffusion of plants, some of which are a source of great annoyance or injury to the countries into which they have been introduced. Very many illustrations of this kind might be given, but I shall content myself with offering you only one. Some years ago, the achenes of the obnoxious *Xanthium spinosum* were introduced into South Africa, through the medium of imported Merino sheep, to whose wool they clung. These achenes or seed-pods became the source of at first a few plants which were not recognised as injurious ; but these soon became so muitiplied throughout the sheep-walks of Cape Colony, and did so much damage to the wool-production, through the spines of the weed tearing out the growing wool, that special legal enactments were made for its extirpation : the rigid enforcement of penalties alone has kept it from becoming a sweeping curse to the wool-producers. In the Orange River territory this imported weed has nearly destroyed wool-production. In 1854, Zymotic Pleuro-pneumonia was carried into the Cape of Good Hope by diseased cattle. The malady was not recognised—at any rate, no measures were devised to eradicate it, and its germs were speedily diffused. Since then it has ravaged our African colonies, and it has been extended into Central Africa, where it is as much dreaded by the uncivilised tribes who possess cattle as it is now by ourselves. In the course of time it will have invaded the whole of the African continent, simply because no sufficient measures have been adopted for its suppression. If the achenes of the *Xanthium spinosum* have proved a curse to the wool-producers of South Africa, so have the germs of Pleuro-pneumonia to the cattle-owners.

If I am justified in asserting that zymotic diseases are due to the action of specific germs, possessed of vitality and special characters as absolute and marked as those whch produce plants or animals—and every fact with which I am at present acquainted supports this assertion—then am I as justified in asserting, from all the evidence before me, that these germs cannot be spontaneously generated. Life only springs from preceding life—no combination of influences or conditions known to man will produce a plant or animal without a seed or germ ; the causes so often invoked as operating in the production of specific diseases are utterly insufficient, as they can no more develop them without the pre-existing germ, than man can be developed without pre-existing man. Zymotic disorders never spring up *de novo*. We might as well admit the appearance of a plant where no seed had been sown,

as the advent of one of these disorders without a previous germ. I quite agree with Sir Thomas Watson, when he says that "a disease is supposed to be generated *de novo* when the evidence is negative only, and consists solely in our inability to trace with the eye the continuity of a chain whose connecting links are known to be invisible. To conclude from this that no chain exists, is palpably absurd. There are a thousand unsuspected ways in which the invisible contagium of these maladies may be conveyed."

Organic matter endowed with vitality, and composed of living particles, cannot be created by man, nor do we know of their independent creation. The chemist or mineralogist may form crystals of organic or inorganic matter, but no one can create a seed, a blood-corpuscle, or a secreting cell.

In adopting the argument I have here brought forward, the question may be asked, and has been asked, How did these diseases first originate, if they cannot be developed independently now? Well, that question is no doubt pertinent enough ; but it is like many more of a similar kind—more easily asked than answered. The answer will be forthcoming when we know how man, animals, and plants originated. All matter has had an unknown origin, and so have plants, animals, and specific diseases. To assert that the latter may be spontaneously developed, merely because we cannot explain how they first originated, is as absurd as to maintain that a tree or an animal may appear without the pre-existence of parent trees or animals. Assuming that these maladies are solely due to the presence of specific germs, and that these germs must exist in order to produce them, then we need not bewilder ourselves in inquiring into the how and wherefore of their first production, any more than we need do into the origin of the first man, first dog, or first elephant. These things are beyond our knowledge, and we can only deal with matters as they present themselves to us.

Rinderpest is not a European disease, and I am not aware that any but writers in the public papers in 1865-66 ever said it could be developed here. When little was known regarding it, we were informed many years ago that it was developed in Southern Russia. We now know that it is an Asiatic disease, and that so far from being spontaneously generated, it is always traced to a contagious source. The Russian veterinarians have tracked it into Central Asia, but they have never been able to discover where it was generated. Its existence depends solely upon its contagious properties, and the violation of every hygienic law will not produce it. When its contagium is destroyed in a country, it will not again appear unless a fresh supply is introduced from an infectious centre. This is one of the diseases which can be extinguished, just as noxious plants or animals can be exterminated.

Contagious Pleuro-pneumonia and Foot-and-mouth disease belong to the same category. They have been extended over the world solely through their contagious properties, and they cannot be spontaneously generated anywhere. We can trace their existence and diffusion for more than a century, and their ravages and extension have been simply owing to the fact that they were not looked upon as contagious, but due to "something in the air." For nearly thirty years they were allowed to scourge this country unchecked, and we permitted our colonies to be invaded by them, because we could not recognise their being purely contagious disorders. Within the last few years this recognition has taken place ; measures have been adopted which should have been taken thirty years ago, and now these two maladies are almost unknown in the land. Sheep-pox is never seen here, except as an introduced disease ; and it could be easily extinguished on the Continent, if proper measures of occision and isolation were enforced. In Denmark it is unknown, because diseased sheep are never allowed to enter.

Rabies is a malady about which doubts might be entertained as to its being always due to its contagious properties, but I am now convinced that

its spread, and indeed its existence, depends solely upon its contagium. There are several parts of the world in which it has never been seen, merely because it has not been carried to them ; and the dogs in them live, and are subjected to exactly the same external influences, as in regions where this terrifying and fatal disorder is frequent. The irregular, and oftentimes extremely protracted, period of latency, the long distances travelled by rabid dogs, the readiness with which bites may be inflicted by them on healthy dogs without the wounds being detected, and some other circumstances attending the evolution of this disease—all conspire to render its origin sometimes obscure, and make it appear as if it could arise spontaneously. I feel certain that Rabies is a contagious malady which could be stamped out by the adoption and enforcement of special sanitary measures.

Tuberculosis is another cruel disorder which the evidence of every day goes to prove is contagious and infectious, and that its existence and spread depend upon its infective principle. It is becoming more and more prevalent, simply because its infectiveness is not recognised ; and it is all the more serious for the reason that it may be communicated from the bovine species to man and other creatures. This disease could also be extinguished by proper measures.

There are several other contagious maladies belonging to this category, but I will omit noticing them, and come to one which is at present very prevalent in London, and indeed throughout the country, and is causing much loss and inconvenience. This is Glanders—a notoriously contagious disease of solipeds, transmissible to mankind and several other species of animals, and nearly always fatal. While many veterinarians would be disposed to admit the non-spontaneity of some of the other contagious maladies, I feel inclined to believe that there are indeed but few who would grant that this disease also belongs to the specific class which cannot be developed through aught save its own special contagium. In our text-books and in lectures, in our consultations and discussions, it is set down as a malady capable of spontaneous origin, though it is also admitted that it can be extended by contagion. The causes which are supposed to produce it are said to arise—I quote from a new edition of one of our veterinary text-books —from debilitating influences, "such as old age, bad food, overwork, exhausting diseases, and general bad management ; from specific miasmatic or animal poisons, such as those generated in localities where large numbers of horses are congregated together, in camps, barracks, large cab or other establishments, even where the stables are well ventilated, lighted, drained, and the animals well attended to in every way, but more particularly where the stables are ill-ventilated, badly-drained, dark, and foul. Horses, when crowded on board ship, are very liable to this affection, and the Arabs, in transporting their horses from Arabia to India, always choose that part of the year when the passage is shortest, lest the accidents incident to a long voyage might oblige the hatches to be closed, and want of ventilation promote the development of Glanders." The writer continues : "I have also observed that Glanders is developed in new stables, where the walls are not thoroughly dry—where, in fact, in common language, they are said 'to sweat' ; and finally, Glanders occurs as a sequence to exhausting diseases, more especially if the animal be old or of a bad constitution. These causes, and a generally vitiated condition of the animal system, may be said to produce Glanders—(1) By causing the introduction into the blood of vitiated or decomposing material generated in the external surroundings of the animal ; (2) by inducing the formation of degenerated material within the animal system ; (3) by preventing the excretion of the degraded constituents normally generated within it by natural tissue-changes, or excessively formed within it by various disordered functions, or introduced into it from

without. The most common forerunner of Glanders, more particularly of that form of it known as Farcy, is the disease commonly called *Diabetes insipidus*, or Polyuria. It cannot be said that in Diabetes there is any obstruction to the excretion of degraded tissue ; indeed the reverse is the case, excretion of urine being enormously increased. If we look deeper into the matter, we shall, however, see the Polyuria is but are sult of rapid tissue-changes, rapid emaciation of the body being a most prominent symptom, with debility arising from degradation of tissue, and from the presence of the degraded materials within the circulatory fluid. So apparent is this condition, that it has been truly said that Diabetes, when arising from no cognisable cause, is often indicative of a general breaking-up of the constitution." (*To be continued.*)

## ONTARIO VETERINARY COLLEGE, CANADA.

THE closing exercises at this institution took place recently in the large museum of the College. A large number of students presented themselves for examination. The great proportion of successful candidates speaks well for the thoroughness and efficiency of the instruction given. The Board of Examiners was composed of the following gentlemen : Messrs. Coleman, Cæsar, Duncan, Wilson, Sweetapple, Elliot, Cowan, McNaught, and Dr. Thorburn, who, after a most rigid examination, awarded diplomas to the following gentlemen :—

### DIPLOMAS.

S. Brenton, Belleville ; A. Bell, Sharpton ; W. Burt, Simcoe ; J. Burnett, London ; G. Dunphy, Salford ; G. Coulter, Islington ; P. Z. Colsson, Mobile, Alabama, U.S. ; J. B. Fretz, Pennsylvania, U.S. ; F. L. Groff, Ohio, U.S. ; H. G. Hawley, Brantford ; Thos. Meredith, Jamestown, N.Y. ; J. Loughman, Montreal ; B. B. Page, Illinois, U.S. ; P. Stevenson, Aurora ; R. Riddle, Cobourg ; D. H. McFadden, Allanford ; U. Springer, Waterloo ; C. P. Smith, St. Mary's ; J. Taylor, St. Catharine's ; J. P. Whitehead, Delaware ; B. Way, Belleville ; L. A. Severcool, Ohio, U.S. ; P. Shalliol, Ohio, U.S. ; E. P. Westell, Arkona ; D. Young, London.

Primary—G. Bell, Westbrook ; G. Howell, Carlow ; J. Donelly, Palmerston.

### PRIZE AND HONOUR LIST.

*Seniors.*

Pathology—Silver medal, G. W. Dunphy. Honours, W. Burt, H. G. Hawley, J. Loughman, B. B. Page, U. Springer, C. P. Smith, P. Stevenson, B. Way, J. Whitehead.

Chemistry—First prize, C. P. Smith ; second, U. Springer ; third, J. Whitehead. Honours, G. Coulter, B. Way.

Entozoa—First prize, G. W. Dunphy. Honours, C. P. Smith, U. Springer, J. Taylor, B. Way, J. Whitehead.

Dissection—Prize, P. Z. Colsson.

Anatomy—Silver medal, J. Whitehead. Honours, S. Brenton, W. Burt, P. Z. Colsson, G. Dunphy, J. Loughman, C. P. Smith, U. Springer, P. Stevenson, B. Way.

Physiology—First prize, C. P. Smith ; second, G. Coulter, G. Dunphy, J. Whitehead. Honours, B. B. Page, R. Riddle, P. Shalliol, E. P. Westell.

Materia Medica—First prize, C. P. Smith, B. Way, equal. Honours, G. Dunphy, B. B. Page, P. Stevenson, U. Springer, D. Young.

Gold medal for the best general examination—C. P. Smith, St. Mary's.

Honours, W. Burt, G. Dunphy, B. B. Page, U. Springer, P. Stevenson, B. Way, J. Whitehead.

*Juniors.*

Physiology—First prize, J. A. Dell ; second, W. E. Langford.

Pathology—First prize, J. S. Butter ; second, J. A. Dell. Honours, D. L. Devone, S. L. Honiford, — Logan, W. E. Langford, S. Maguire.

Chemistry—First prize, J. A. Dell. Honours, W. E. Langford, A. Maguire.

Anatomy—Silver Medal, J. A. Dell. Honours, J. S. Butter, A. Logan, A. Maguire, — Shaw.

A numerous company assembled to witness the presentation of the above prizes, which took place in the museum on Friday morning. At the conclusion of the exercises, Professor Buckland, on behalf of the Board of Agriculture, stated that in his department, breeding and management of stock, the following prizes were awarded—G. W. Dunphy, books to the value of 20 dols. ; J. W. Litehead, 15 dols. ; B. Way, 10 dols. He also said that he had the authority of the Commissioner of Agriculture for saying that that gentleman sincerely regretted his unavoidable absence. He expressed the full confidence that, great as had been the success of the College in the past, it would be greater in the future.

## NORTH OF IRELAND VETERINARY MEDICAL SOCIETY.

A MEETING of the above Society was held at Belfast, on April 22nd, 1880, J. P. Dunlop, Esq., M.R.C.V.S., in the chair. Present—Messrs. Doris, Brown, Drummond, W. J. Johnson, Kernshaw, Giffen, Simcocks, Dunlop, and the Secretary. Visitors—Professor Williams, J. Greaves, M.R.C.V.S., W. S. Core, M.D., H. Torrens, M.D., H. B. Murray, Surgeon, and K. J. Urquhart, Veterinary Student. A large number of letters of apology were read.

Mr. Dunlop vacated the chair in favour of the incoming President for the current year, Mr. J. DORIS, Cookstown, who read his inaugural address, dealing with several of the leading questions now on the *tapis*. He afterwards exhibited an unique specimen of schirrus cord. An interesting discussion followed, in which Professor Williams, Messrs. Chambers, Simcocks, Dunlop, Greaves, and Kidney took part.

Mr. J. B. DUNLOP related a most interesting case of puncturing the bladder *per rectum !*

Professor WILLIAMS, Mr. GREAVES and others criticised the case, the general opinion being very favourable to the successful operation as performed by Mr. Dunlop.

Professor WILLIAMS next addressed the meeting on the "Practical Treatment of Disease," etc. He exhibited "Volkmann's" instrument, which he specially advocated as being efficacious in the surgical treatment of Splint. He also exhibited Chassaiognal's drainage tube, and especially recommended its use in obstinate cases of Quittor, etc. In the treatment of wounds he prefers, as a deodorizer, carbolised water to carbolised oil. He next touched on the subject of Constipation, expressing his opinion that the cure of Constipation by forcible means was often calculated to defeat its own ends. Aloes, for example, being often eliminated from the system by the kidneys. He believed in the non-purgative treatment in Enteritis. To secure a beneficial result by the administration of opium it must be exhibited in large doses, say—pulv. opii. ʒj or tinct. opii. ʒviij, or in injection of morphia grs. viij. He referred to Tetanus as being peculiar to certain districts, and drew attention to the different methods of treatment now adopted —nitrite of amyll, Calabar bean, subcutaneous injection of morphia—and

drew special attention to the good results which he had seen follow the administration of bromide of potassium.

Dr. CORE, Dr. TORRENS, Messrs. GREAVES, SIMCOCKS, DUNLOP, and the SECRETARY having spoken to the address by Professor Williams,

Mr. GREAVES, F.R.C.V.S., read a paper on "Veterinary Medical Associations," drawing special attention to the "penal clause," "compulsory apprenticeship," "preliminary examination in hands of council," and "examiners to be veterinary surgeons only."

An animated discussion followed the reading by Mr. Greaves of his highly interesting paper, when

It was proposed by Mr. KIDNEY, seconded by Mr. BRADSHAW, supported by Messrs. SIMCOCKS and DUNLOP, and carried unanimously, that the North of Ireland Veterinary Medical Society do petition the Council of the Royal College of Veterinary Surgeons in favour of the "penal clause."

Votes of thanks having been accorded to the out-going office-bearers, to Professor Williams, Mr. Greaves, and the other visitors, a most successful meeting was brought to a close, when a pleasant time in fraternal gossip was enjoyed after dinner.

GEO. KIDNEY, *Hon. Sec.*

The following are Mr. Greave's remarks on Veterinary Medical Associations :—

In rising to make a few observations on Veterinary Medical Associations, although to most of you I am an entire stranger personally, I am not really so ; since it will be remembered I had the honour to take part in the inauguration of another, in fact the only other, Veterinary Medical Association in Ireland, in 1869. Holding, as I do, strong opinions of the great value and importance of these associations ; having taken a deep interest and an active part in them from the first, viz., over twenty years ; being either a member or an honorary associate of every association in England and in Scotland, I may, therefore, he permitted to feel that I can speak of them with some authority ; and at my time of life, having been actively engaged nearly forty-six years in my profession, much of this time I have occupied (as President of the Royal College of Veterinary Surgeons or member of Council) a leading position. Acting a part which has in some degree given a tone and direction to my profession, I hope and ask that I may be excused if I assume to myself a standpoint which will enable me, without egotism, to offer some advice to my professional brethren generally, and to this association in particular. In the term of life I have indicated, I have in all my writings, addresses, and votes, endeavoured to ventilate and keep prominently to the front the various subjects and reforms which the more advanced thinkers have considered were necessary to the well-being of our common profession. We have carried during the last few years to a successful issue ten important measures which I have enumerated in one of my papers. We have four other important measures, as I have also shown, and which I am anxious to see carried to a successful issue before I die. They are, 1st, "The Penal Clause;" 2nd, "The Apprenticeship clause;" 3rd, "The Preliminary examination of the student when he enters college in the hands of the Council;" 4th, "The Court of Examiners composed of Veterinary Surgeons only;" hope is strong within me that it will be done, but in respect to what has been done allow me to say we are much indebted to our late President Sir Frederic Fitzwygram, and to the various Veterinary Medical Associations in developing public opinion, and bringing a sort of pressure from without upon the Council, and we shall look to you to lend us your powerful aid in future. At this very moment they are exercising this power (and let me tell you here, they are a power, and a great support to those members of council who urge

on popular measures), by memorialising the council to at once apply to Parliament to obtain an Act of Parliament to secure for the profession the penal clause. At the last meeting of council, a fortnight ago, Mr. Fleming moved that we apply to Parliament for this act, Mr. Whittle seconded it, and I supported it. A committee was appointed to draw out a form, and a rough draft will be laid before the Council at our next meeting in July, when it will be discussed. I feel little doubt there will be severe opposition to it, and it will materially strengthen the hands of those members who are in favour of progress, if this and every other association will petition the Council to apply, and if possible obtain, for our profession this just and long-desired measure. The Lancashire Veterinary Medical Association at their meeting last week took action; they unanimously decided to memorialise the Council to this effect, and offered to contribute their quota of the expense; the Yorkshire Association has done the same. You will perceive by this that you can serve your profession in more ways than one; but this is when an influential body like you decide resolutely to act your part. I wish here to remind you that there are many ways in which these associations can render important services to the profession generally, as well as to each member individually. They create a better opinion and feeling within us towards each other; they tend to beget and develop a more correct knowledge of each other's disposition and intellectual *status;* this fosters a better acquaintance, a greater confidence and friendship. They have a great power in restraining within us any desire for detraction, or a feeling of animosity arising from envy or jealousy; they often bring about a better understanding between competitors, changing enmities for fast friendships. They give opportunities to correct false and unjust impressions or opinions of each other's character, and which may have rankled in the breast and tended to embitter each other's life; but besides all this, we improve one another, and become better practitioners and more useful members of Society; this must follow as the day the night when we frequently meet, discuss and interchange ideas on scientific and practical subjects in a frank and proper spirit. I have never attended a single meeting without deriving some information which has benefited me and which I could take home with me, and apply it to some useful purpose; and in this way they have laid me under a deep debt of gratitude to them. In conclusion, let me beg of you most earnestly that you also remember this, that everything depends upon ourselves individually to make our profession what we wish it to be. Let us never show a carelessness, an indifference in the performance of our duties; let us be diligent and industrious, cultivate kindly, pleasant, and agreeable manners, be gentlemanly and honourable to each other, and in all we do, avoid above all things making charges out of all proportion to services rendered. And then I say it must follow as the day the night, provided always that we possess a thorough practical knowledge of our business, that we shall be able to make and sustain a character and position for ourselves that will be everything we can desire.

## MONTREAL VETERINARY COLLEGE.

THE regular fortnightly meeting of the Montreal Veterinary Medical Association was held on March 20th, the Vice-President, C. J. Alloway, V.S., in the chair. Mr. Donald Campbell regretted that, owing to ill-health, he had been unable to prepare his promised paper, but hoped to do so at some future meeting. Mr. M. S. Brown then described a very interesting and unusual monstrosity of a calf he had recently examined. Mr. E. J. Carter was next called upon to read his paper on Rabies, which proved very interesting and instructive. He first glanced at the history of Rabies, showing that it has been known from the earliest times; next the distribution of it occupied his attention. It

occurs in nearly all parts of the world, being particularly prevalent in Western Europe. Recently it had almost exterminated the Esquimaux dogs of Greenland. Australia, New Zealand, and Tasmania are among the few fortunate locations where it is unknown. Its nature, and the cause which produces it, were then fully discussed. Its nature is not fully understood, but that it is a disease of the nervous system there is little doubt. Many causes have been assigned to it, such as hot weather, change of climate from a cold to a hot, etc.; but statistics prove that it occurs oftener in the winter than summer, and that native dogs are as liable to it as those imported. The symptoms of the disease were graphically described, and the speaker impressed upon his hearers the necessity of being able to distinguish between it and an attack of Epilepsy. Many dogs, especially pet dogs fed upon meat, were subject to epileptic fits, and sometimes excited in the minds of their owners the fear that they were mad. He had no doubt many valuable dogs had been destroyed from such a mistake. It was commonly supposed that mad dogs were afraid of water. Such is not the case. Mad dogs are often very thirsty and will attempt to drink, but owing to paralysis of the muscles of the throat are unable to swallow. Cases are also on record of mad dogs swimming across streams in order to attack men or animals on the other side. Fear of water is sometimes, but not always, a symptom of the disease in man, and the name *Hydrophobia* should, therefore, be discarded as a misnomer.

A lively discussion followed, and the chairman gave an account of some interesting cases which had come under his notice, not of Rabies, which he had never seen, but of the effects produced on the minds of nervous persons when bitten by a dog they supposed to be mad. The disease, he was happy to say, was almost entirely unknown in Montreal and Canada generally, alalthough cases of simply Epilepsy sometimes gave rise to sensational rumours.

A vote of thanks to the essayists was passed, and the meeting adjourned.

On March 30th, the prizes and diplomas were presented to the students of this institution. The Hon. Mr. Beaubien acted as chairman, and in brief terms addressed the students, congratulating them on the success which they had attained in their studies. He called their attention to the fact that those who passed a successful course in the Montreal Veterinary College and received their diplomas were looked upon all over the world, and more especially in Canada and the United States, as veterinary surgeons who understood and were well grounded in the work of their profession. The College had become so useful that not only private individuals, but he was glad to say the Governments of the country, were recognising the good, faithful, and hard work which Dr. McEachran was performing. He wished the College greater prosperity in the future, and trusted next year the students would be double the number. He had now much pleasure in presenting the prizes to the several successful competitors. The following are the names of the winners, and also the graduating class of 1880 :—

THIRD SESSION.

Best General Examination—1st prize, silver medal, Mr. William McEachran, Montreal; 2nd prize, A. P. Hinkley, Buffalo, N.Y.

Anatomy—1st prize, Mr. Wm. McEachran, Montreal.

Materia Medica—1st prize, Mr. Peter Cummins, Quebec.

SECOND SESSION.

General Pathology—1st prize, Charles H. Ormond, Milwaukee.

Anatomy—1st prize, Mr. Charles H. Ormond, Milwaukee.

Materia Medica—1st prize, Mr. Fred. Torrance.

FIRST SESSION.

Anatomy—1st prize, Mr. Walter Wardel.

Best Practical Examination (medalist excluded)—1st prize, a complete case of instruments, presented by Mr. David Morrice. Won by William Jakeman, Boston.

SENIOR CLASS.

French—1st prize, Joseph Page, Lotbiniere.

GRADUATES.

Wm. McEachran, Montreal; Wm. Jakeman, Boston; N. P. Hinkley, Buffalo; A. W. Harris, Ottawa; Mathias S. Brown, Montreal; Peter Cummins, Quebec; Joseph Page, Lotbiniere.

## THE NATIONAL VETERINARY BENEVOLENT AND MUTUAL DEFENCE SOCIETY.

A GENERAL meeting of the members of the above society was held in the Medical Institute, Liverpool, on Friday 14th May. Present the President Mr. P. Taylor, Mr. Greaves, Mr. Alex. L. Gibson, Mr. Reynolds, Mr. Storrar, Mr. W. A. Taylor, Mr. R. C. Edwards, Mr. Whittle, Mr. E. Faulkner, and the Secretary. From the reports of the Secretary and Treasurer it appeared that the society now consists of 200 members, and accumulated funds to upwards of £1500, clear of all liabilities.

Since its formation the society has pecuniarly and otherwise assisted in a great number of cases, and the necessity for such a society abundantly proved.

It was especially urged on the members the necessity of their paying in their subscriptions as early as possible, and thus saving the time of the officers, who are all honorary.

Votes of thanks having been passed to the officers for their past services the following gentlemen were appointed trustees, and instructed as to the investment of the funds. Mr. P. Taylor, R. S. Reynolds, Mr. Greaves and Mr. Whittle.

The other officers were unanimously re-elected. President, Mr. P. Taylor. Vice-President, Mr. R. S. Reynolds. Treasurer, Mr. T. Greaves. Hon Secretary, George Morgan. Council, T. Taylor, W. Woods, W. Whittle, J. Freeman, W. Broughton, J. S. Carter, J. Storrar, F. Blakeway, Professor Williams, Professor Walley, J. Lawson, A. L. Gibson.

Considerable discussion arose as to the correct interpretation of Rule VIII., referring to the powers of the investigation committee. An amendment of the rule was proposed by Mr. Greaves, in advocating which he made the following remarks :—" We, your officers, have an authority from you to seek an interview with the defendent, and hear from him the particulars of the case. This has always been done, and we have formed our opinion. In some cases an opportunity has offered itself for us to hear the other side also, and we then find that we had formed an increased opinion of the case. I therefore maintain that we have an absolute right to receive from you an authority to seek an interview with the plaintiff, as well as defendant, and hear both sides in every case. We can then report the case fairly before the Council, and the Council will be in a position to judge with satisfaction to itself and in justice to its member, and thus be better able to protect the interests and honour of our society. In one case in which your officers acted thus, they saved the funds of the society £40 at least; in another case

in which your officers did not act, although they had a strong inclination to do so, they would have saved the societies fund £90 or more, I therefore maintain that we ought to have a rule. 'That in every case the officers shall have the power to seek an interview with the plaintiff, as well as with the defendent, with the view of gaining a full knowledge of the case, and if they see it to be to the interest of the defendent and the society, to endeavour to arrange terms of settlement subject to the approval of the Council.' I am emboldened the more to argue this, in consequence of the fact that in every case in which we have had an interview with the plaintiffs, we have found them open to reason, and desirous to settle the case on its merrits amicably. I am fully aware that a solicitor would not advise this course ; he would say DO not interfere, leave it to me, let it go on to trial, you are sure to win. The other lawyer is advancing precesely the same argument ; but we say it is by far the best for these cases to be fairly considered and decided by the common-sense of a council of experienced veterinary surgeons."

After an expression of opinion by the various gentlemen present, it was ultimately carried to be read along with Rule VIII.

A vote of thanks having been passed to the President for his services in the chair, the meeting terminated.

GEORGE MORGAN,
*Hon. Sec.*

## NEW MEMBERS OF THE PROFESSION.

AT the meetings of the Scottish section of the Court of Examiners of the Royal College of Veterinary Surgeons, held in Glasgow, on April 13th, the following students from the Glasgow Veterinary College were admitted members of the profession :—

| | |
|---|---|
| Mr. Allan Pollock Blue ... | ... Eastfield, Mearns, Renfrewshire. |
| „ Thos. Cunningham Bowie | ... Kilbarchan, Renfrewshire. |
| „ Thos. Anderson Douglas | ... Fenwick, Ayrshire. |
| „ Richard Hughes ... | ... Llanarmoor, South Wales. |
| „ Wm. Jas. Gray Johnson | ... Fountainville, Belfast. |
| „ Alexander Milligan ... | ... Corwall, Wigtonshire. |
| „ Jeremiah McCarthy ... | ... Leap, Co. Cork. |
| „ George Hill Pollock ... | ... Bridgeton, Glasgow. |
| „ William Stevenson ... | ... Howwood, Renfrewshire. |
| „ James Wyper ... ... | ... Vincent Street, Glasgow. |

Messrs. Blue and Hughes passed with Great Credit.

The following students passed their Second Examination on April 19th and 20th :—

Mr. Michael Yeats Lees.
„ Alexander Macadam.
Frederick Foster.
„ James Arthur Gosling.
„ Robert Glass.
„ William Watt.
„ Henry Rogers.
„ Richard Ebbett.
„ Robert Roberts.
„ Hugh Bradley.

Mr. John Freeman.
„ Jas. Morton Howat.
„ William Pettigrew.
„ John Blackley.
„ John Smith.
„ John Taylor.
„ Robert Black.
„ James Nisbet.
„ Thomas Maclay.
„ Alexander Crighton.

Mr. John Freeman passed with Very Great Credit, and Messrs. Macadam, Gosling, Glass, Watt, Rogers, Bradley, and Taylor passed with Great Credit.

At the several meetings of the Court of Examiners, held in Edinburgh, on April 14th and 15th, the following students were admitted members of the Royal College of Veterinary Surgeons :—

*Edinburgh New Veterinary College.*

Mr. James Wood Ingram ... ... Manchester.
„ Alfred Moritz Michaelis ... Old Trafford, Manchester.
„ Frederick James Richmond ... Blackpool, Lancashire.
„ John Richard Simpson ... Bedale, Yorkshire.
„ Arthur Joseph Dobbyn ... Waterford, Ireland.
„ William Swithenbank... ... Moorside, Oldham, Lancashire.
„ James Johnston Fraser ... Keith, Banffshire.
„ George Sandeman ... ... Kirriemuir, Forfarshire.
„ Archibald Munro ... ... Salisburgh, Holytown, Lanark.
„ Thomas Caldecott ... ... Knutsford, Cheshire.
„ George Whitehead ... ... Barnsley, Yorkshire.

Messrs. Ingram, Dobbyn, Swithenbank, Fraser, and Whitehead passed with Great Credit.

*Edinburgh Veterinary College.*

Mr. Alexander Grey ... ... Edinburgh.
„ William Calvert ... ... Middleham, Yorkshire.
„ William Ryan ... ... ... Limerick.
„ William Hill ... ... ... Houghton Regis, Beds.
„ Christopher Black ... ... Batterstown, Co. Meath.
„ Alex. Henderson Gentle ... Edinburgh.

Messrs. Grey, Calvert, Ryan, Hill, Black, and Gentle passed with Great Credit.

The following students passed their Second Examination :—

*Edinburgh New Veterinary College.*

Mr. William Woods.
„ Thomas Green.
„ Isaiah Leather.
„ Fredk. Huntington Osgood.
„ Frederick Whittaker.
„ Henry Cooper.
Mr. William Graham.
„ John Jones.
„ Chas. James Martin.
„ John Francis Healy.
„ Arthur Frederic Appleton.
„ Fred. Eugene Rice.
Mr. Jas. George Bell.

Messrs. Woods, Green, Leather, Whittaker, Graham, Healy, and Rice passed with Great Credit.

*Edinburgh Veterinary College.*

Mr. Richd. Wm. Burke.
„ Thomas Gilchrist.
„ James Gibson.
„ John Joseph Doyle.
„ Geo. Marks Davey.
„ Clement Burston.
„ Thomas Wright.
„ John Bull.
„ Wm. Watt Dollar.
Mr. Lionel Llewelin Leach.
„ John Alex. Thompson.
„ William Fairbairn.
„ Robert Beech.
„ Patrick Dundon.
„ John Beattie.
„ William Cassells.
„ Peter Manuel.
„ Wm. Jas. Powell.
Mr. Robert Wm. Powell.

Mr. Wm. Watt Dollar passed with Very Great Credit; Messrs. Burke, Gilchrist, Gibson, Doyle, Davey, Burston, Bull, Thompson, Fairbairn, Beech, Cassells, Wm. J. Powell, and Robt. Wm. Powell passed with Great Credit.

The following students passed their First Examination :—

*Edinburgh Veterinary College.*

Mr. Bernard Martin.
„ Patrick Daniel Reavy.
„ Thomas Cunningham.
„ John Rowland Dykes.
Mr. Geo. William Tennant.
„ Tom Harrison.
„ William Hackett.
„ Wm. Johnston Smith.

Mr. Geo. Wm. McArthur.

Messrs. Harrison and Smith passed with Great Credit.

*Edinburgh New Veterinary College.*

Mr. George Phelan.
„ Jas. Fraser Murray.
„ John Brizill.
Mr. Joseph Abson.
„ William King.
„ Fredk. Percy Carter.

Mr. Colin Campbell.

Messrs. Phelan, Murray, Brizill, Abson, and King passed with Great Credit.

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## Jurisprudence.

### CRUELTY TO ANIMALS.

At Mundford, on April 6th, before the Revs. A. Sutton and W. W. Hutt, William Pooley, of Northwold, blacksmith, and Farrand Wingfield, of Stoke Ferry, dealer, were charged by Inspector Henry Taylor, of the Royal Society for the Prevention of Cruelty to Animals, with unlawfully and cruelly ill-treating, abusing, and torturing a horse at Methwold, on the 28th February last. Mr. Walpole appeared on behalf of the Society. The facts of the case were that the two defendants cut off a portion of the horse's tail, which is a very common practice, and is called "docking," and in doing this they did it in an unskilful manner, thereby increasing the torture. The practice of late years has been very much discontinued by many respectable horse-dealers, and it has been decided by eminent judges that the practice is cruel within the meaning of the Act. After Mr. Walpole had quoted several cases wherein similar acts, as well as those of cutting the combs of cockerels, etc., had been decided as illegal, he called Mr. Catling, veterinary surgeon to the Metropolitan police force, who produced the portion of the horse's tail that had been cut off, and stated that the operation had been performed in a most unskilful manner, and was attended with the most excruciating pain, as the spinal cord extended quite down the tail of the animal, and when any severance of any part took place the whole of the spinal cord was affected. He was of opinion that the operation under any circumstances was not necessary or essential—indeed, the practice was a most cruel and unjustifiable one. The Bench inquired of the witness if he practised the operation, and he said he used to do it twenty years ago, but had discontinued it. He had several large places of business in London, and during the past twenty years he had refused to perform the operation hundreds of times, although he or any skilful veterinary surgeon would be able to perform the operation so as to cause less pain than was caused to the animal by the defendants. The Bench expressed their opinion that if it were illegal to "dock" a horse, it was as wrong if skilfully done as unskilfully done. Mr. Catling fully concurred in that opinion. Mr. Hinde, veterinary surgeon of Downham, was prepared to give confirmatory evidence, but was not called. The Bench fined the defendants 1s. each and £3 3s. 3d. costs. The defendant Wingfield strongly protested against the decision of the Bench, and said at first he would go to Norwich Castle rather than pay, but afterwards paid the fine and costs.

## Obituary.

THE Registrar reports the following deaths :—

Wm. Garrard, M.R.C.V.S., Picknall, Derbyshire. Diploma dates 29th May, 1844 ; Geo. E. Cooper, M.R.C.V.S., Yeaveley, Derbyshire. Diploma dates 30th April, 1867 ; Fredk. Mather M.R.C.V.S., Daventry. Diploma dates 19th December, 1855.

## Army Veterinary Department.

*Gazette*, April 27th.

VETERINARY DEPARTMENT.—Veterinary Surgeon, First Class, J. G. Berne, from the Royal Artillery, to be Veterinary Surgeon, First Class.

*Gazette*, May 7th.

VETERINARY DEPARTMENT.—Veterinary Surgeon G. D. Whitfield is placed on temporary half-pay.

The *Army and Navy Gazette* has the following important notice :—" The new Veterinary School which Colonel Stanley announced some time ago in the House that it was proposed to established, will be started at Aldershot in the course of a week or so, and a warrant has been drawn up by the War Office providing for the necessary appointments in connection therewith. The Professorship is to be filled by Veterinary Surgeon J. Lambert, late of the 17th Lancers, who is recognised as one of the ablest and best-read officers of his department. Mr. Lambert will receive a special allowance of £150 per annum, and he has lately been pursuing a special course of study at Edinburgh, in order to fit himself for the discharge of the duties of his new position."

## Notes and News.

HYDROPHOBIA IN SCOTLAND.—As we predicted some time ago cases of Hydrophobia could not fail to occur in Scotland, from the extension of Rabies across the border, and the absence of measures to prevent its spread. Not long ago cases were reported from Glasgow, and since then others have been published. The latest occurred in the person of a strong healthy man, from the village of Alexandria, who was admitted to the Royal Infirmary, Glasgow, on Monday, April 19th. He stated that he had been bitten by a dog in the month of December last. He did not appear to suffer particularly, but presented the characteristic well-marked spasms on attempting to drink any fluids. This condition continued till Thursday night (22nd April), when the patient's state resembled that of a person with Delirium Tremens. On Friday morning he died. What renders the case more interesting, is that in January a man hailing from the same town, and who had been bitten about the same time, came into the hospital and died of Hydrophobia. The treatment adopted in these cases consisted mainly in the hypodermic injection of pilocarpine. Many cases of Rabies have been reported from Edinburgh, and people have been bitten. There is, consequently, every reason to apprehend deaths from Hydrophobia ere long.

THE DISTOMA MUSCULUM.—At a late meeting of the Hertfordshire Natural History Society, Dr. Brett read a paper on " Fluke in Sheep, with Remarks on a new Parasite discovered in the Muscular Fibres of Sheep which have the Rot." His attention was first directed to this new parasite by Dr. Mann, the Medical Officer of Health for Pontypool, and Dr. Brett proposed to name it *Distoma musculum*.

# Correspondence, etc.

## THE PROFESSION *v.* THE ROYAL VETERINARY COLLEGE.

*To the Editor of the* VETERINARY JOURNAL.

SIR,—Will you kindly place before your readers the enclosed Report of the Governors of the Royal Veterinary College, which I have just received. I may point out that the Report takes no notice of one of the chief complaints, viz., that apart from the injury to individual members, the profession, as a whole, must be lowered in public estimation by the low fees charged at the College.

That the Governors were convinced of the justness of the complaints advanced is satisfactory; and it is sincerely to be hoped that, having commenced reforms, they will ere long see their way to abolishing the subscription system altogether. This would tend greatly to cement the desired friendship between the college and the profession so essential to the progress of veterinary knowledge, the avowed object of the college.

One of the grounds of complaint, viz., the payment to the college of two guineas for sending a *learned* professor to investigate outbreaks of serious disease, is unaltered. The old fee is to remain; non-subscribers are to pay five guineas instead of three. This arrangement will tend to manufacture subscribers, or else members of the Royal Agricultural Society, who, by paying one guinea, can procure the professor's services for two guineas.

Mr. Collins' data are no refutation of the charge against the college of "underselling." There can be no doubt the college has "undersold" for years, and will continue doing so, although not to so great an extent. "Underselling" consists in undertaking to do work for a lower sum than anyone else could possibly do it. Granted that 1,447 guineas were paid for examining a like number of horses. But suppose each horse belonged to individual subscribers, each of whom sent the full number he *contracted* for, and was entitled to send, the college would have had to examine nearly 30,000 horses for 1,447 guineas, or about *one shilling* each horse.

My labours in the matter of "unfair competition" being presumably at an end, I will take this opportunity of sincerely thanking those gentlemen who have given me valuable advice and support, not, of course, forgetting my provincial correspondents—upwards of 300 in number.

I am, etc.

THOMAS MOORE.

### REPORT.

ROYAL VETERINARY COLLEGE,
*February 9th*, 1880.

YOUR committee, by appointment, met to-day a deputation from the London and Provincial Veterinary Surgeons, who feel aggrieved at what they term "the unfair competition of the Royal Veterinary College with them in their ordinary practice."

The deputation was numerous, and comprised, among others, Messrs. J. Moore, T. Moore, J. Rowe, J. I. Lupton, W. Hunting, W. Helmore, and R. Ward.

The committee invited the members of the deputation to express, either collectively or individually, their grounds of complaint and the remedies which they would suggest.

It soon became obvious that the grounds of complaint were divided into two heads, viz.—1st. The injury done to private practitioners by the privileges enjoyed by subscribers, as sanctioned by the rules of the Royal Veterinary College; and 2nd. The injury also done to them by the alleged practice of the professors of the college among the public.

The committee beg to state that the complaints were very temperately and fairly stated.

With regard to the first ground of complaint—namely, the privileges of subscribers—it was urged by the deputation that though the great majority of the subscribers did not avail themselves of their privileges to any unfair extent, yet there were a certain number of dealers and large firms who did so, and who thus received advantages at the expense of the college, at great loss of time to the professors and to the injury of private practitioners, which was not warranted by the amount of their subscriptions.

The committee think that this complaint is not unreasonable, and suggest, for the consideration of the governors, that the privileges of subscribers should not be taken advantage of to such an extent as to afford fair grounds of complaint.

The object of the college is not profit, but the promotion of veterinary education. It is right that those gentlemen who are kind enough to subscribe towards this desirable object should receive in return some advantages. But it is certainly not the object or wish of the governors to injure or interfere with the fair rights of the veterinary profession.

The committee think that these abuses might be checked without any detriment to the subscribers by restricting the number of horses to be examined in a year to five without fee, or to ten on payment of an additional sum of £2 2*s*., or at a charge of 10*s*. 6*d*. for each horse above five.

The committee also recommend that the charges per night per horse should be raised from 3*s*. 6*d*. to 4*s*.

The deputation complained of the very low charge made for the visit of a professor in serious outbreaks of disease, viz., £2 2*s*.

The ground of this complaint was not that such visits interfered with the practice of the local veterinary surgeon, for in such cases his daily attendance would, of course, be still required; but the fact that the services of an eminent professor from London could be obtained for £2 2*s*. caused much discontent, and interfered with the usual, and, indeed, proper charge of the local veterinary surgeon.

There is no doubt a good deal of truth in this argument, but, on the other hand, it is desirable, in the best interests of agriculture, that farmers and others should be supplied at a low charge with the best professional advice on the occurrence of serious outbreaks of disease, and the committee therefore do not recommend any alteration in the charge either to the subscribers to the college or to the members of the Royal Agricultural Society; but to non-subscribers the committee recommend that the charge should be raised to £5 5*s*.

The committee think that the profession would be satisfied with these changes; and as they will not affect injuriously, but rather otherwise, the financial interests of the college, they recommend them to the favourable consideration of the governors.

It will be observed that the complaints are not directed against the college generally, but against certain abuses, or, if abuse be too strong a word, against undue advantage being taken by certain individual subscribers.

As regards the college generally, the data collected by Mr. Collins and the secretary from the books show that there is no ground for any charge of "underselling" the profession.*

* [We rely upon the school advertisement for proof of the charge of "underselling" the profession. The following are the terms upon which it seeks to obtain subscribers, and subscribers have a right to exact the fulfilment of the terms, if they choose :—

A subscription of *twenty guineas* entitles the subscriber to all the privileges of the institution, as a general Veterinary Establishment and Hospital for Animals, for life; and an annual subscription of *two guineas* to the same privileges during the continuance of such subscription.

A subscriber is entitled to have admitted into the hospital for medical and surgical treatment an unlimited number of horses or other animals, his own property, at a charge only for their keep. Also, without the payment of fees, to have the opinion of the professors as to the treatment of any animal he may wish to retain in his own establishment.

A subscriber has likewise the privilege of having twenty horses examined *as to soundness* in the course of a year, and to receive the opinion of the professors thereon, either verbally or in writing, free of charge; but if he require an examination of a greater number, a fee of ten shillings and sixpence will have to be paid for each *extra* horse, or the annual payment increased to five guineas.—Ed. *V. J.*]

It appears from those data that in the year past 2,052 patients were treated, and 1,447 horses were examined. In addition to the charge for keep, the subscriptions paid gave an average of £1 1s. for each horse examined, and 9s. for cost of medical treatment for each case.

As regards the second ground of complaint—viz., the practice of the professors in visiting and examining animals outside the college, which was stated to be frequent, no specific instances were brought forward in a way so as to admit of immediate investigation.

The committee could only assure the deputation that any such practice was most strictly prohibited by the terms of the engagement of the professors, and that any cases which they could prove would be visited with the severest penalty. With this assurance the deputation appeared perfectly satisfied.

The deputation also objected to the professors constantly appearing in law courts as witnesses or experts, as interfering with the legitimate practice of the profession.

The committee assured the deputation that the governors were much opposed to the valuable time of their professors being taken up, sometimes for days together, in the law courts; but that a subpœna compelled attendance.

The committee recommend, with a view of discouraging this practice, that the fees received for such attendance be paid into the College Fund.

The deputation likewise objected to the employment of the professors at the Smithfield and Royal Agricultural Shows at a low fee; but on explanation that it was for the good of the public service that the inspectors at these shows should be totally unconnected with breeders and dealers, and also specially skilled in a knowledge of dentition of animals, so as to command public confidence, the deputation withdrew their objection.

The deputation then pressed their objection to the employment of the professors at the Islington and Alexandra and other Horse Shows.

As these shows are private speculations of Limited Liability Companies the committee think that the profession have fair grounds for their objection. When a company make a profit, they may fairly be called on to pay the usual rates. Where a society makes no profit, as the Smithfield Club and Royal Agricultural Society, it is right that the college should afford them every assistance.

### The Cheap Practice.

The deputation did not in any way object to the cheap practice lately instituted by the Governors.

The deputation made a suggestion that private veterinary surgeons should be allowed to send interesting cases into the College Infirmary *free of charge*. It was stated that there were many interesting cases which would not pay the owner to have treated on the chance of recovery, and which would therefore be sent to the knackers; but which would be most interesting to keep for further treatment.*

The committee think that there would be a difficulty in doing this, but they also are of opinion that it would be very desirable if it could be arranged. As a matter of fact, there are very few severe cases in the infirmary. The horses belonging to gentlemen are generally treated before the cases become serious, and again, this class of horse seldom meets with the severe accidents so common among a lower class.

The deputation spoke throughout in a very fair and friendly manner, and expressed a cordial wish to work with the Royal Veterinary College.

F. W. Fitzwygram, *Chairman.*
Arthur Somerset.
M. J. Harpley.

### Adoption.

At a meeting of the Governors on March 16th, 1880, this Report of the Committee was presented and agreed to, subject to certain necessary alterations in the bye-laws and regulations. *(By order)* Richard A. N. Powys,
*Secretary.*

* All animals so admitted will become the property of the college; but any animal, if cured, may be reclaimed by its former owner on paying for its keep while under treatment.

## A REMINISCENCE OF THE ANNUAL MEETING OF THE R.C.V.S., HELD AT EDINBURGH, MONDAY, MAY 3, 1880.

*To the Editor of the* VETERINARY JOURNAL.

SIR,—Time has again brought us together to hear the official report of the Council's doings during the past year, and for the first time in the northern capital, an *epocha* in the profession. The *object* being a good and excellent one, it is to be earnestly hoped that those who *can* will cause that *object* to be realised.

The attendance was small, comparatively; and how it was so I am at a loss to explain, considering it is the first meeting in the north. I regret my own absence, legal and private matters being my excuse, and many others have quite as good; but our professors' absence from such a gathering admits of none, as also that of many members of council and vice-presidents.

The report, as of yore, was adopted, and in this instance *sans* the usual debate. And I am surprised *one* question was not asked—an important one, in my opinion—for upon this point the issue of contributions towards the college building fund mainly depends. I allude to the use of the council chamber being granted to the members for the discussion of important matters pertaining to the profession's interests, by requisition, under the bye-laws.

The motion on clause 12, put by a new member, deserves the profession's serious attention, and demands temperate acumen ere the judiciary be issued. For if reports, rumours, scandal, and professional jealousy be permitted to ascend the tribune, sad indeed will be the fate of all of us. In no period of the profession's history have we had such a serious division among its members, which is to be deeply deplored by all right thinking men, whose whole aim should be to *stamp out* this sad condition; for, until this be done, we are *stagnant*.

The matriculation examination came under discussion, and it is to be hoped that uniformity will be reached. To obtain this the R.C.V.S. should be empowered to direct the examinations, and grant the matriculation certificate, which should be in duplicate order: that of the *minimum* for memberships and *maximum* for fellowships. This should, indeed, be demanded out of honesty to the students who anticipate the Fellowships, for at no period will they be so equal to a matriculation as on their entry into professional life and scientific studies.

The omission of the names of the Scotch graduates to honourable mention must have been an oversight; the temperate manner in which this was introduced to the meeting is highly commendable; we may rest assured such an incident will not re-occur under our present able and courteous secretary.

The protection of the profession is another important subject; and to our president *elect*, whoever he may be, a most arduous duty will devolve, which, when consummated, will bring its reward to that individual and repay him in no small measure for the labour and anxiety certain to be incurred.

No penal clause can, it must be remembered, make our profession strong; and unless we bury all rancour with professional jealousy we never shall attain to the proud position we should occupy as students of one of the foremost liberal sciences.

Why on earth we should yield ourselves to be slaves to such unstable motives I cannot divine; from the *humblest* in our ranks to the most "*luminous shining lights*" in it, such unhealthy disposition is most rife at this present; and that *sudden death* may attend and utterly annihilate such *disease* in our body corporate from the moment of the perusal of this, my reminiscence, is the earnest prayer I offer.

Life is too short by far for such evil indulgences. Let us therefore unite this day, before night cometh; and be true to our motto, "*Vis unita fortior.*"

" 'Tis in the mind alone our follies lie,
The mind that never from itself can fly."

Now to pastures new. The festive board, in numbers surrounded, on an equality with our London festivity, was an omen of goodwill. The dinner committee deserve well of the members for the very able manner in which their duties were performed.

The usual toasts given and responded to call for nothing but passing notice: Professor Turner giving that of "The R.C.V.S." in a choice and eulogistic manner, which was responded to by the president, who remarked on the ease of office obtained through the most able manner the duties had been performed by his predecessor. Let us hope he will (as doubtless he will) hand the badge of office to his successor with the same *éclat.*

This terminated the first meeting in Edinburgh, which may be taken as a success, and bids well for future anticipations of both pleasure and profit.

In closing, I beg in the most considerate manner to allude to the election of members of council. If other important duties deter a member or members elect from attendance more than once, twice, or, at most, thrice, of what value can such member or members be? Surely members of council should be elected *de facto*, not *pro forma.*

Trusting the new president will find an efficient council, with wholesome deliberations, during his year of office, which I anticipate will be one of hard work, and mark an important epoch in our profession's history,

I subscribe myself as of old,
Yours faithfully,

London, *May 14th*, 1880. "ARTEMUS SECUNDUS."

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## TO CORRESPONDENTS.

In consequence of the great pressure on our space, a number of Communications and Reports of Societies are held over.

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## Communications, Books, Journals, etc., Received.

COMMUNICATIONS have been received from M. E. Decroix, Principal Veterinary Surgeon, Paris; T. H. Lewis, Edinburgh; Professor McCall, Glasgow; J. W. Hill, Wolverhampton; W. H. Bartram, London; D. Winton, London; C. Whitworth, London; Professor Smith, Ontario; T. Moore, London; G. A. Banham, London; T. Briggs, Bury; "Diogenes"; A. W. Hill, London; "Artemus Secundus"; "Trembling X"; W. Woods, Wigan; J. W. Rowe, London.

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BOOKS AND PAMPHLETS: *Dr. Siedamgrotzky*, Ueber Fleischvergiftungen; *N. Cressy*, Diseased Meat, and its Consequences upon Our Health and Happiness; *E. F. Flower*, The Stones of London; *F. M Röll*, Arzneimittellehre für Thierärzte; *H. W. Pabst*, Anleitung zur Rindviehzucht; Annual Report of the Veterinary Department of the Privy Council, for 1879.

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JOURNALS, ETC.: *Archiv für Wissenschaftliche und Practische Thierheilkunde; Students' Journal; Archives Vétérinaires; Lancet; Medical Press and Circular; Annales de Méd. Vétérinaire; Edinburgh Medical Journal; Mark Lane Express; Live Stock Journal; Recueil de Méd. Vétérinaire; Journal of the National Agric. Society of Victoria; L'Echo Vétérinaire; National Live Stock Journal; Wochenschrift für Thierheilkunde and Viehzucht; Der Thierfreund; Repertorium der Thierheilkunde; Der Theirarzt; Oesterreichische Vierteljahresschrift für Wissenschaft Veterinarkunde; Medical Times and Gazette.*

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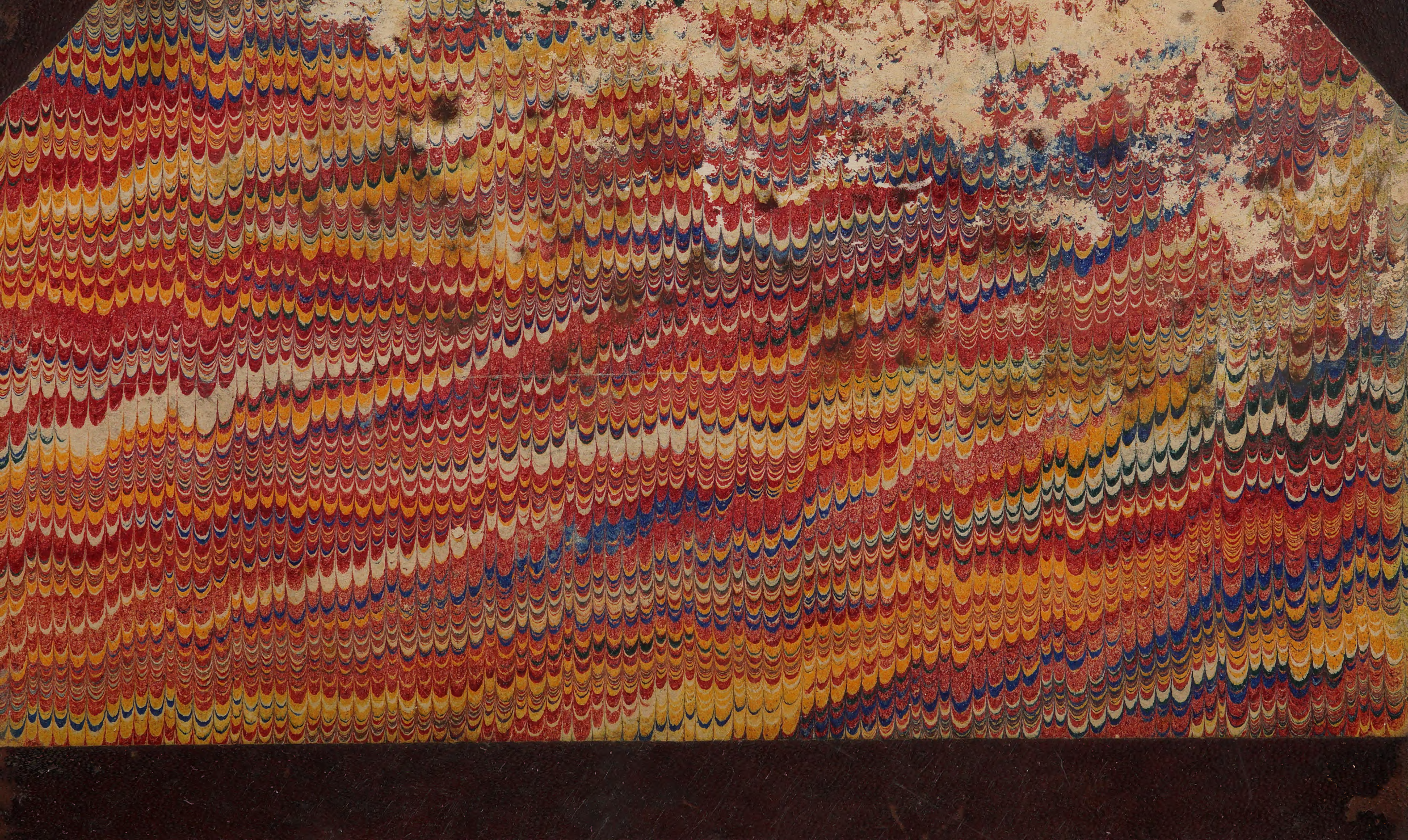
NEWSPAPERS: *Irish Times; Montreal Gazette; Arklow Standard; Montreal Herald; Lynn Advertiser; New York Herald; Scotsman; Edinburgh Courant; Glasgow Herald.*

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